LIBRARY
BOSTON UNIVERSITY
SCHOOL OF MEDICINE

DEC 29 1954

VOLUME 9 • DECEMBER 1954 • NUMBER XII

Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

Library of Boston University
School of Medicine
80 E. Concord St.,
Boston, Mass.

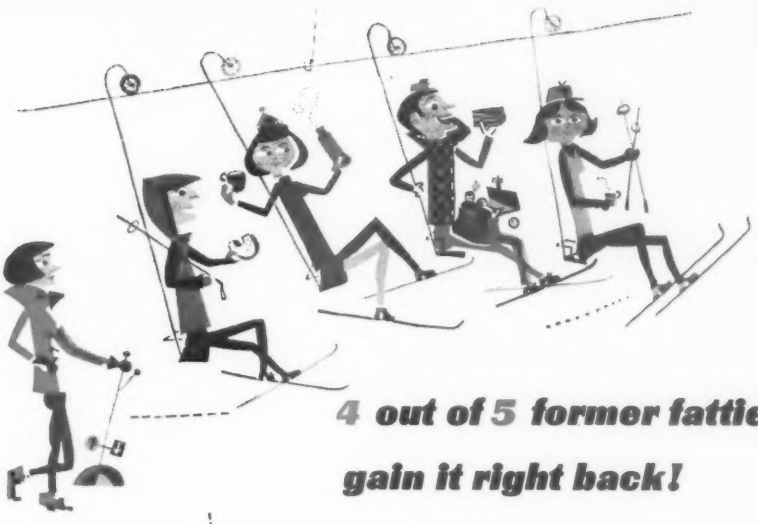
Official Publication of

SEASON'S GREETINGS

to

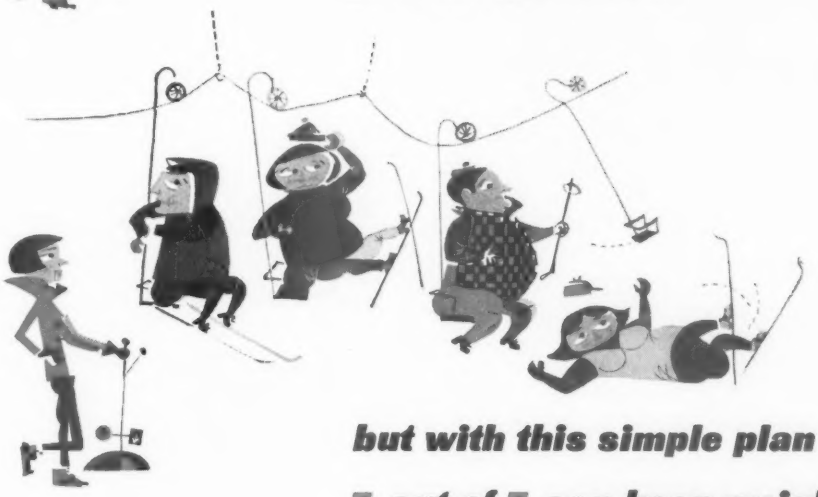
OUR ADVERTISERS

Abbott Laboratories, Inc. ✦ Ayerst, McKenna and Harrison, Ltd. ✦ Beech-Nut Packing Company ✦ Bristol-Myers Company ✦ The Coca-Cola Company ✦ Esta Medical Laboratories, Inc. ✦ Hoffmann-La Roche, Inc. ✦ Holland-Rantos Company, Inc. ✦ Charles B. Knox Gelatine Company, Inc. ✦ Lakeside Laboratories, Inc. ✦ Lederle Laboratories Division of the American Cyanamid Company ✦ Eli Lilly and Company ✦ S. E. Massengill Company, Inc. ✦ Mead Johnson and Company ✦ Ortho Pharmaceutical Corporation ✦ Parke, Davis and Company, Inc. ✦ Pfizer and Company, Inc. ✦ R. B. Roerig and Company ✦ Schering Corporation ✦ Julius Schmid, Inc. ✦ Sharp and Dohme ✦ Martin H. Smith Company ✦ Smith, Kline and French Laboratories ✦ Tampax Incorporated ✦ The Upjohn Company ✦ Whittier Laboraories ✦ Winthrop-Stearns, Inc.



4 out of 5 former fatties...

gain it right back!



but with this simple plan

5 out of 5 can keep weight off

the *Am Plus*® POST-DIET PLAN

80% fail to sustain weight loss after the diet.*

Just one AM PLUS capsule daily: before the day's "big" meal, before a club lunch or dinner, at snack time or whenever the patient finds temptation greatest.

AM PLUS is dextro-amphetamine plus 19 important vitamins and minerals. It helps rehabilitate post-dieting habits while augmenting nutritional intake.

**Aaron, H.: Weight Control, Consumer Reports 17:100 (Feb.) 1952.*

ROERIG Rx

Chicago 11, Illinois

The AMERICAN WOMEN'S HOSPITALS

For unto us a Child is born

Unto us a Son is given

Mother and Child at the AWH Poylclinic, Nikaia, Greece

Haitian Children With an AWH Nurse Rural School, Limbe, Haiti

A Korean Doctor and Nurse on Duty at the Dongsan Hospital, Taegu, Korea

Triplets at the Baby Wing of the Maternity Shelter, Greenville County, S.C.

SERVICE TO CHILDREN THE WORLD AROUND

At an AWH Clinic in France

Visiting Nurse, Southern Highlands, U.S.A. A Health Demonstration

A Philippine Doctor on Duty at the Free Clinic for Mothers and Children, Manila, P.I.

Memorial Gifts and Legacies
(income tax deductible)
Gratefully Received and Carefully Administered

Checks should be made payable to the
AMERICAN WOMEN'S HOSPITALS, INC.

Where Charity stands waiting
And Faith holds wide the door,
The dark night wakes, the glory breaks
And Christmas comes once more.

Date .....

American Women's Hospitals, Inc.
50 West 50th Street.
New York 20, N.Y.

Enclosed is my Christmas check for

$ .....

☐ Use it as needed.

☐ Use it for .....

.....

Name .....

Address .....

.....

.....

New

For ESSENTIAL HYPERTENSION

an alliance of the classic and contemporary . . .

THEOMINAL® R.S.

(Theominal with Rauwolfia serpentina)

Combines for synergistic action:

Theobromine	***(5 grains) 0.32 Gm.***
Luminal® (pioneer brand of phenobarbital)	***(1/6 grain) 10 mg.***
Rauwolfia serpentina alkaloids (alseroxylon fraction)	***1.5 mg.***

Theominal itself has been widely prescribed for essential hypertension for several decades. The addition of Rauwolfia serpentina alkaloids—purified alseroxylon fraction—to the well established Theominal formula represents a substantial improvement.

With the use of Theominal R.S., objective and subjective improvement can be obtained in a large percentage of hypertensive patients. There is mild and gradual but sustained reduction of excessive blood pressure and pulse rate to near normal levels. Striking symptomatic improvement occurs concurrently: alleviation of congestive headache, vertigo, dyspnea, nervous irritability, apprehension and insomnia.

With Theominal R.S. medication the antihypertensive action of Luminal and theobromine may be evident in a few days, whereas a week or more may elapse before the Rauwolfia component exhibits its maximum effectiveness. However, the sense of well being due to Rauwolfia is experienced within a few days of medication and usually precedes the development of the maximum antihypertensive effect. Theominal R.S. is well tolerated.

DOSAGE: The usual dose of Theominal R.S. is 1 tablet two or three times daily. When improvement has been maintained for a time, the dose may be reduced or medication suspended occasionally until its resumption is indicated.

HOW SUPPLIED: Theominal R.S. is supplied in bottles of 100 tablets.

WINTHROP

Winthrop-Stearns INC.

New York 18, N. Y. Windsor, Ont.

Theominal and Luminal, trademarks reg. U. S. Pat. Off.

Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

VOLUME 9 | DECEMBER 1954 | NUMBER 12

Special Number

BRANCH ELEVEN, SOUTHWESTERN OHIO

SCIENTIFIC ARTICLES

Clinical Experience with Anticoagulant Therapy, *Helen I. Glueck, M.D.* 381
Congenital Anomalies, *Marjorie A. Grad., M.D.* 387
A Review of Ballistocardiography, *Gwendolyn M. L. Morris, M.D.* 391

SPECIAL ARTICLES

Rehabilitation and What It Means, *Emily Hess, M.D.* 394
Survey of Women Graduates from Cincinnati Medical Colleges: 1870 to 1953, *Margaret Jane Schneider, M.D.* 400
Medical Education of Women in Cincinnati 401
Still Pioneering 403

AMERICAN MEDICAL WOMEN'S ASSOCIATION

President's Message, *Camille Mermod, M.D.* 407
High Lights of 1954 Mid-Year Board Meeting 407
Medical Women of the Year 408

REGULAR FEATURES

Past Presidents of AMWA
MABEL E. GARDNER, M.D., *Catharine Macfarlane, M.D.*, and *Helena T. Ratterman, M.D.* 411
HELENA T. RATTERMAN, M.D., *Mabel E. Gardner, M.D.* 412

INDEX — VOLUME 9 413

MISCELLANEOUS

American Women's Hospitals, Picture Story ..... Adv. p. 2
Editorial Board ..... Adv. p. 6
Officers of the A.M.W.A. ..... Adv. p. 12
Chairmen of Standing Committees ..... Adv. p. 14
Branch Officers ..... Adv. p. 16
Junior Branch Officers ..... Adv. p. 18
International Correspondents ..... Adv. p. 24
Editorial Forecast ..... Adv. p. 34
General Information ..... Adv. p. 40
Index to Advertisers ..... Adv. p. 42
Index to Products Advertised ..... Adv. p. 42

Neither the Editor nor the Publisher of the Journal of the American Medical Women's Association is responsible for any statements made or opinions expressed by any of its contributors.

JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is published monthly by the American Medical Women's Association, Inc., at 136 4th Ave., Nashville 3, Tenn. Entered as second class matter at the Post Office at Nashville, Tennessee, under the Act of August 24, 1912. Acceptance for mailing at special rates of postage provided for in Section 1102, Act of October 8, 1917, and authorized July 15, 1918.

Copyright 1954 by the American Medical Women's Association, Inc.

Subscription, $5.00 per year; $1.00 single copy.
EDITORIAL AND ADVERTISING OFFICE, Journal of the American Medical Women's Association, 1790 Broadway, New York 19, N. Y. Telephone Judson 6-8683. Advertising Manager, Joseph Bourgholtzer, 4 Wilsey Square, Ridgewood, New Jersey. Ridgewood 6-7615.

JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION
1790 Broadway, New York 19, N. Y.

Editorial Board

JANET K. AITKEN, C.B.E., M.D., F.R.C.P.....*London, England*
INES L. C. DE ALLENDE, M.D.....*Cordoba, Argentina*
MARY M. CRAWFORD, M.D.....*New York, N. Y.*
BEULAH CUSHMAN, M.D.....*Chicago, Ill.*
MARIA PAUMGARTTEN DEANE, M.D.....*Belem, Para, Brazil*
GLADYS H. DICK, M.D.....*Chicago, Ill.*
EDNA M. GUEST, O.B.E., M.D.....*Toronto, Canada*
MARGARET H. JONES, M.D.....*Los Angeles, Calif.*
JOSEPHINE H. KENYON, M.D.....*New York, N. Y.*
ELIZABETH KITTREDGE, M.D.....*Washington, D. C.*
IRENE A. KOENEKE, M.D.....*Halstead, Kansas*
ESTHER P. LOVEJOY, M.D.....*New York, N. Y.*
CATHARINE MACFARLANE, M.D.....*Philadelphia, Pa.*
MINNIE LEE MAFFETT, M.D.....*Dallas, Texas*
DAME A. LOUISE MCILROY, O.B.E., M.D.....*London, England*
HARRIETT C. MCINTOSH, M.D.....*New York, N. Y.*
LOUISE PEARCE, M.D.....*Princeton, N. J.*
GILDA PERAZA, M.D.....*Havana, Cuba*
ELLEN C. POTTER, M.D.....*Trenton, N. J.*
BARBARA B. STIMSON, M.D.....*New York, N. Y.*
EDNA H. TOMPKINS, M.D.....*Boston, Mass.*
RUTH WELLS, M.D.....*Pasadena, Calif.*
PRISCILLA WHITE, M.D.....*Boston, Mass,*

Specialists

Anesthesiology.....VIRGINIA APGAR, M.D., *New York, N. Y.*
Cardiology.....TERESA MCGOVERN, M.D., *New York, N. Y.*
Endocrinology.....RITA FINKLER, M.D., *Newark, N. J.*
Gastroenterology.....MARIE ORTMAYER, M.D., *Chicago, Ill.*
Gynecology.....ELOISE PARSONS, M.D., *Chicago, Ill.*
Neurology.....KATE CONSTABLE, M.D., *New York, N. Y.*
Nutrition.....GRACE GOLDSMITH, M.D., *New Orleans, La.*
Obstetrics.....ANNE S. MASTER, M.D., *Cleveland, Ohio*
Orthopedic Surgery.....RUTH JACKSON, M.D., *Dallas, Texas*
Pathology.....EDITH L. POTTER, M.D., *Chicago, Ill.*
Pediatrics.....MARY B. OLNEY, M.D., *San Francisco, Calif.*
Physical Medicine and Rehabilitation.....NILA K. COVALT, M.D., *Rocky Hill, Conn.*
Plastic Surgery.....ALMA DEA MORANI, M.D., *Philadelphia, Pa.*
Psychiatry.....ANNA COYNE TODD, M.D., *Washington, D. C.*
Public Health.....HELEN M. WALLACE, M.D., *New York, N. Y.*
Radiology.....ELIZABETH SCHULZE HEALD, M.D., *Berkeley, Calif.*
Surgery.....ANNELLA BROWN, M.D., *Boston, Mass.*
Urology.....OCCO E. GOODWIN, M.D., *San Francisco, Calif.*

EDITOR
M. EUGENIA GEIB, M.D.

ASSISTANT EDITORS
MARCELLE BERNARD, M.D.
MARGARET S. TENBRINCK, M.D.

MANAGING EDITOR
ELIZABETH C. SMITH

DEPARTMENTAL EDITORS
Recent Advances in Medicine
FRANCES L. BOGATKO, M.D.
New York, N. Y.

Modern Concepts of Physiology
ESTHER M. GREISHEIMER, M.D.
Philadelphia, Pa.

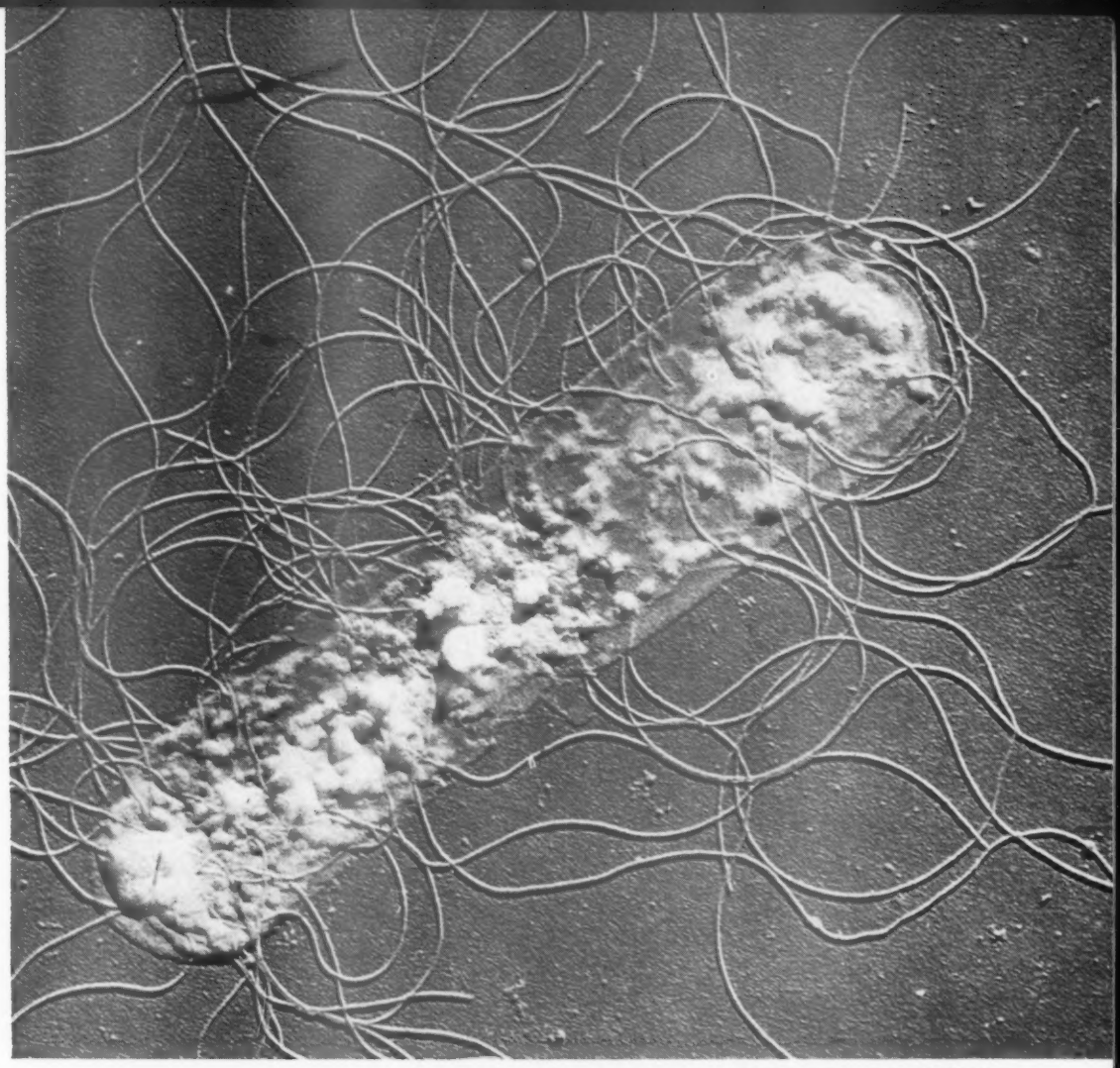
Seminars on Therapy
FRIEDA BAUMANN, M.D.
Philadelphia, Pa.

Book Reviews
MARGARET HAY EDWARDS, M.D.
Philadelphia, Pa.

Reports of Proceedings
MARGARET S. TENBRINCK, M.D.
New York, N. Y.

Medical School Student News
EV F. DODGE, M.D.
Little Rock, Ark.

Chairman of Publications Committee, ELIZABETH S. WAUGH, M.D., Philadelphia, Pennsylvania



ELECTRON PHOTOMICROGRAPH COURTESY R.C.A. LABORATORIES

Proteus vulgaris 29,000 X

Proteus vulgaris is a Gram-negative organism commonly involved in

urinary tract infections • septicemia

peritonitis following low perforation of the gut.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

For the well-being
of your patients

TAMPAX

intravaginal protection
during menstruation.
Three absorbencies.

Accepted for Advertising
in Publications of the
American Medical Association

TAMPAX INCORPORATED
Palmer, Massachusetts

MW-124

...it's **IRON-PLUS**

...it's **SMALLER** than a dime

naturally, it's...

...it's now only **2-A-DAY**

...it's more **ECONOMICAL**

new Iberol®

filmtab*

*T.M. for Abbott's film sealed tablets. Pat. applied for.

new Iberol

the IRON-PLUS formula

2 Filmtabs contain:

Elemental Iron (as *Ferrous Sulfate*)	210 mg.
+	
Bevidoral® (*Vitamin B_{12} with Intrinsic Factor Concentrate, Abbott*)	1 U.S.P. Oral Unit
+	
Folic Acid	2 mg.
Ascorbic Acid	150 mg.
Liver Fraction 2, N.F.	200 mg.
Thiamine Mononitrate	6 mg.
Riboflavin	6 mg.
Nicotinamide	30 mg.
Pyridoxine Hydrochloride	3 mg.
Pantothenic Acid	6 mg.

THE RIGHT AMOUNT OF IRON
+
ANTI-PERNICIOUS ANEMIA ACTIVITY
+
ESSENTIAL NUTRITIONAL FACTORS

new Iberol

now 2-A-DAY dosage

Therapeutic dose for iron-deficiency, nutritional and pernicious anemias is now only 2 tablets daily. For prophylaxis in anemias of old age, pregnancy, and convalescence (particularly in post-gastrectomies): 1 or more tablets daily as required.

new Iberol

SMALLER than a dime

Because of the new *Filmtab* (marketed only by Abbott), new Iberol provides for the first time in a tablet of its size—the basic antianemia agents plus essential nutritional factors, including the *complete* B complex. Tasteless, easy to swallow . . . a hard tablet, not a soft, sticky capsule.

new Iberol

now more ECONOMICAL

Dosage supply of 2-a-day Iberol *Filmtabs* now lasts 50% longer than the previous 3-a-day treatment—and the savings are passed on to your patient! Potent new formula provides increased antianemia activity. . . eliminates need for added B-complex supplementation.

Abbott

412222

American Medical Women's Association, Inc.

BOARD OF DIRECTORS
1954-1955

OFFICERS

President: Camille Mermod, M.D., 15 Washington St., Newark 2, New Jersey.
President-Elect: Esther C. Marting, M.D., 2314 Auburn Ave., Cincinnati, Ohio.
Retiring President: Judith Ahlem, M.D., 954 South L St., Livermore, California.
First Vice-President: Elizabeth Kittredge, M.D., 3906 McKinley St., N.W., Washington, D.C.
Second Vice-President: Edith Petrie Brown, M.D., 450 Broadway, Bedford, Ohio.
Treasurer: Elizabeth R. Fischer, M.D., 10848 S. Fairfield Ave., Chicago 43, Illinois.
Assistant Treasurer: Mary Margaret Frazer, M.D., 76 W. Adams St., Detroit, Michigan.
Recording Secretary: Carye-Belle Henle, M.D., 195 N. 7th St., Newark, New Jersey.
Corresponding Secretary: Rebecca M. Rhoads, M.D., 416 Chichester Lane, Wynnewood, Pennsylvania.

PAST PRESIDENTS

Dorothy W. Atkinson, M.D., 490 Post St., San Francisco, California.
Elizabeth S. Waugh, M.D., 348 Green Lane, Philadelphia 28, Pennsylvania.
Amey Chappell, M.D., 795 Peachtree St., N.E., Atlanta, Georgia.
Evangeline Stenhouse, M.D., 55 E. Washington St., Chicago 2, Illinois.

REGIONAL DIRECTORS

New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut):
K. Frances Scott, M.D., 32 Gothic St., Northampton, Massachusetts.
North Atlantic (New York, Pennsylvania, New Jersey, Delaware):
Marcelle Bernard, M.D., 635 East 211th St., New York, New York.
Middle Atlantic (Maryland, District of Columbia, Virginia, West Virginia, Foreign):
Eleanor Scott, M.D., 1014 St. Paul St., Baltimore, Md.
South Atlantic (North Carolina, South Carolina, Georgia, Florida, Puerto Rico):
Jean Jones Perdue, M.D., 541 Lincoln Road, Miami Beach 41, Florida.
Northeast Central (Ohio, Indiana, Illinois, Michigan, Wisconsin):
Katharine W. Wright, M.D., 734 Noyes St., Evanston, Ill.
Southeast Central (Kentucky, Tennessee, Alabama, Mississippi, Louisiana):
Margaret L. Kerr, M.D., Charity Hospital, New Orleans, Louisiana.
Northwest Central (Minnesota, Iowa, North Dakota, South Dakota, Nebraska):
Mary Louise Lyons, M.D., 2102 Beaver St., Des Moines, Iowa.
Southwest Central (Missouri, Arkansas, Kansas, Oklahoma, Texas):
Mary A. Jennings, M.D., 4210 Lemmon Ave., Dallas 4, Texas.
Northwest (Montana, Wyoming, Idaho, Washington, Oregon, Alaska):
Elizabeth H. Schirmer, M.D., 1010 S.W. Taylor St., Portland, Oregon.
Southwest (Colorado, New Mexico, Utah, Arizona, California, Nevada, Hawaii):
Jane Schaefer, M.D., 490 Post Street, San Francisco, California.

* * * *

Director of Junior Membership:
Elizabeth S. Kahler, M.D., 3828 Fulton St., N.W., Washington, D.C.

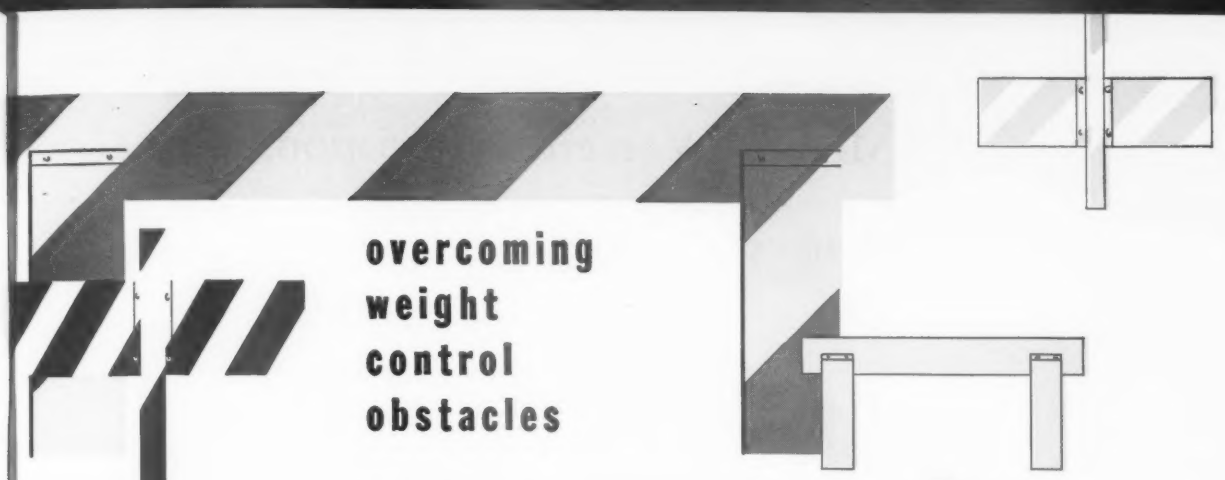
* * * *

Editor of the Journal of the American Medical Women's Association:
M. Eugenia Geib, M.D., 1790 Broadway, New York 19, New York.

* * * *

National Corresponding Secretary to the Medical Women's International Association:
M. Eugenia Geib, M.D., 1277 Clinton Place, Elizabeth, New Jersey.

HEADQUARTERS: 1790 Broadway, New York 19, N.Y., Circle 5-8000, ext. 8
Executive Secretary: Lillian T. Majally



overcoming weight control obstacles

Obedrin®

and the 60-10-70 basic diet

Patients can lose weight and maintain a restricted diet, in comfort, without undesirable side effects . . .

EXCESSIVE DESIRE FOR FOOD

Obedrin offers the full anorexigenic value of Methamphetamine to curb the desire for food, while counteracting mood depression. Patient co-operation is made easier.

NERVOUS TENSION

To avoid excitation and insomnia, Pentobarbital is the ideal daytime sedative. It counteracts over-stimulation by Methamphetamine, but does not diminish the anorexigenic action.

VITAMIN DEFICIENCIES

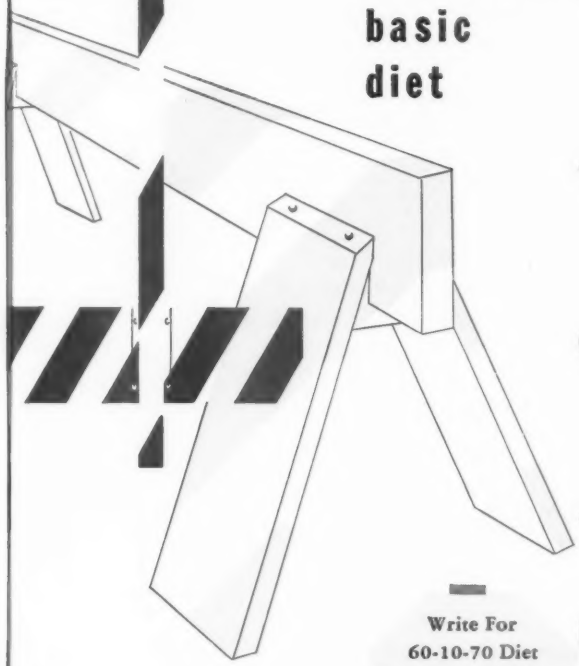
Obedrin tablets contain adequate amounts of vitamins B_1 and B_2 to supplement the 60-10-70 Basic Diet, but not enough to stimulate the appetite.

EXCESSIVE TISSUE FLUIDS

Large doses of Ascorbic Acid aid in the mobilization of fluids, so often an obstacle in obesity.

BULK NOT NECESSARY

The 60-10-70 Basic Diet provides enough roughage, so artificial bulk is unnecessary. The hazards of impaction caused by "bulk" producers is obviated.



Write For 60-10-70 Diet Pads, Weight Charts And Professional Sample Of Obedrin

S. E. MASSENGILL CO.
Bristol, Tennessee

Each tablet contains:

Semoxydrine HCl (Methamphetamine HCl)	5 mg.
Pentobarbital	20 mg.
Ascorbic Acid	100 mg.
Thiamine HCl	0.5 mg.
Riboflavin	1 mg.
Niacin	5 mg.

American Medical Women's Association, Inc.

CHAIRMEN OF STANDING COMMITTEES

1954-1955

Auditing
HELEN JOHNSTON, M.D.
816 Equitable Bldg., Des Moines, Iowa

Credentials
EDITH L. BROWN, M.D.
340 Garfield Ave., Avon-by-the-Sea, N.J.

Elections
CLEMENTINE E. FRANKOWSKI, M.D.
1907 New York Ave., Whiting, Ind.

Finance
ELIZABETH R. BRACKETT, M.D.
371 Franklin Ave., Nutley, N.J.

Historical
GULIELMA F. ALSOP, M.D.
282 West 4th St., New York 12, N.Y.

International
ADA CHREE REID, M.D.
One Madison Ave., New York, N.Y.

Legislative
RUTH ELLIS LESH, M.D.
221 N. College Ave., Fayetteville, Ark.

Library
MABEL E. GARDNER, M.D.
129 South Main St., Middletown, Ohio

Medical Education for Women
EVA R. SARGENT, M.D.
121 Myrtle Ave., North Plainfield, N.J.

Medical Service—American Women's Hospitals
ESTHER P. LOVEJOY, M.D.
50 West 50th St., New York 20, N.Y.

Nominating
HELEN F. SCHRACK, M.D.
216 N. 5th St., Camden, N.J.

Opportunities for Medical Women
SOPHIE TRENT RYAN, M.D.
Lake Shore Dr., Middlefield, Conn.

Organization and Membership
EDITH PETRIE BROWN, M.D.
450 Broadway, Bedford, Ohio

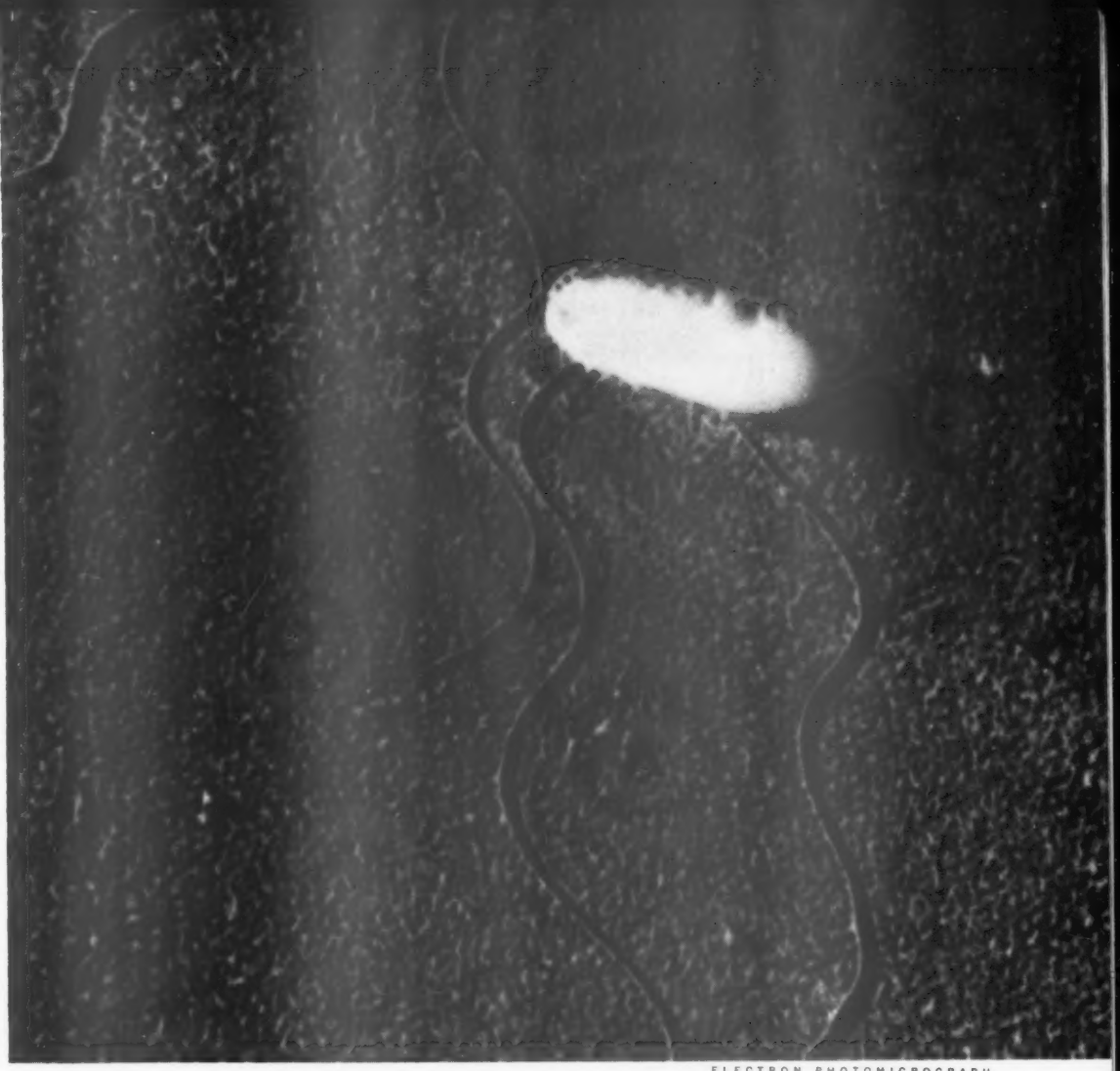
Publications
ELIZABETH S. WAUGH, M.D.
348 Green Lane, Philadelphia 28, Pa.

Public Health
RUTH J. RAATTAMA, M.D.
1360 Race St., Denver, Colo.

Public Relations and Publicity
MARY W. TYLER, M.D.
1435 North Ave., Waukegan, Ill.

Scholarship Awards
ANN GRAY TAYLOR, M.D.
6364 Germantown Ave., Philadelphia 44, Pa.

Woman's Medical College of Pennsylvania
CATHARINE MACFARLANE, M.D.
701 Medical Arts Bldg., Philadelphia 2, Pa.



ELECTRON PHOTOMICROGRAPH

Salmonella paratyphi B 32,000 X

Salmonella paratyphi B (Salmonella schottmuelleri) is a

Gram-negative organism which causes

food poisoning • chronic enteritis • septicemia.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

American Medical Women's Association, Inc.

BRANCH OFFICERS, 1954-1955

ONE, WASHINGTON, D. C.

President: Mary K. L. Sartwell, M.D., 4000 16th St., N.W., Washington, D.C.

Secretary: Alma Jane Speer, M.D., 3232 Garfield St., N.W., Washington, D.C.

Meetings held first Tuesday, October to May.

TWO, CHICAGO, ILLINOIS

President: Clementine E. Frankowski, M.D., 1907 New York Ave., Whiting, Indiana.

Secretary: Ethel A. Chapman, M.D., 406 N. Franklin St., River Forest.

Meetings held monthly.

THREE, MARYLAND

President: Mary L. Hayleck, M.D., 229 East 33rd St., Baltimore 18.

Secretary: Elizabeth Acton, M.D., 700 Cathedral St., Baltimore 1.

Meetings held first Thursday of month.

FOUR, NEW JERSEY

President: Ethel M. Powis, M.D., 845 State Street, Trenton.

Secretary: Sylvia Becker, M.D., 299 Clinton Ave., Newark.

FIVE, PORTLAND, OREGON

President: Miriam Luten, M.D., 105 N.E. 61st St., Portland.

Secretary: Dorothy Vinton, M.D., Medical Arts Bldg., Portland.

Dinner meetings held every two months, with a symposium on scientific topics of general interest.

SIX, OMAHA, NEBRASKA

President: Grace Loveland, M.D., 909 Sharp Bldg., Lincoln.

Secretary: Ruth A. Warner, M.D., 909 Stuart Bldg., Lincoln.

EIGHT, NEW ORLEANS, LOUISIANA

President: Georgiana J. von Langermann, M.D., 1430 Tulane Avenue, New Orleans.

TEN, WISCONSIN

President: H. Gladys Spear, M.D., 161 W. Wisconsin Ave., Milwaukee.

Secretary: Alida Riegelmann, M.D.. 2309 N. 36th St., Milwaukee.

ELEVEN, SOUTHWESTERN OHIO

President: Marjorie Grad, M.D., 1506 Chase Ave., Cincinnati.

Secretary: Rachel Braunstein, M.D., Given Road, Cincinnati.

Meetings held second Tuesday, September, November, January, March, May.

TWELVE, COLUMBUS, OHIO

President: Dorothy F. Falkenstein, M.D., 188 E. State St., Columbus.

THIRTEEN, SAN DIEGO, CALIFORNIA

President: Bernice B. Ennis, M.D., Box 793, Rancho Santa Fe, San Diego.

Secretary: Mary B. Fishel, M.D., 4752 Palm Ave., La Mesa.

Meetings held every other month on fourth Thursday.

FOURTEEN, NEW YORK, NEW YORK

President: Rosa Lee Nemir, M.D., 303 East 20th St., New York.

Secretary: Julia V. Lichtenstein, M.D., 2 West 87th St., New York.

FIFTEEN, CLEVELAND, OHIO

President: Gerda Allen, M.D., Osborn Bldg., Cleveland.

Secretary: Kathryn Hoffman, M.D., Schoffield Bldg., Cleveland.

SIXTEEN, PITTSBURGH, PENNSYLVANIA

President: Joanna Pecman, M.D., 5537 McCandless Ave., Pittsburgh 1.

Secretary: Grace K. Martin, M.D., 2510 Sylvania Dr., Pittsburgh.

EIGHTEEN, NEW YORK STATE

President: Myrtle Wilcox Vincent, M.D., 134 Main St., Binghamton.

Secretary: Elizabeth Olmstead, M.D., 568 Lafayette Ave., Buffalo.

NINETEEN, IOWA

President: Ruth Wolcott, M.D., Spirit Lake.

Secretary: Ada Dunner, M.D., 1010 Bankers Trust Bldg., Des Moines.

Meetings held each April, in conjunction with state medical meeting.

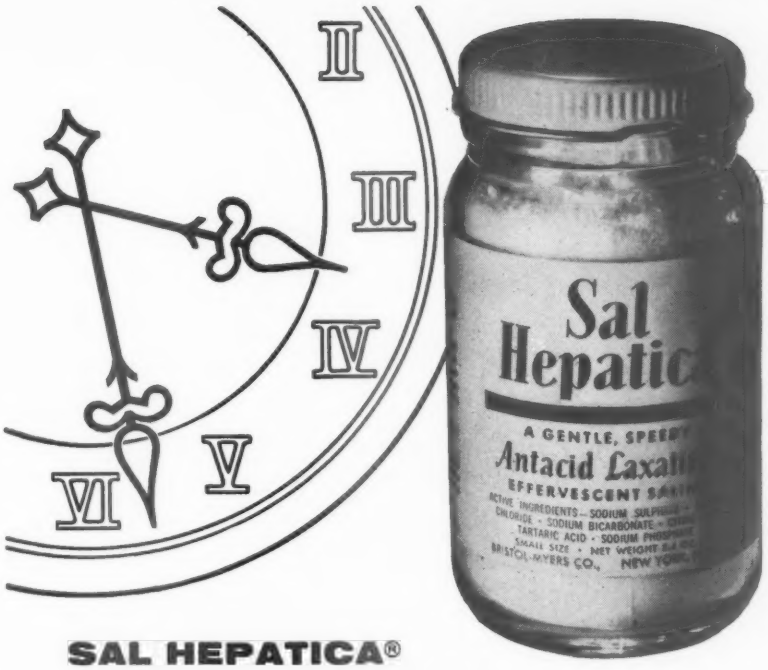
(Continued on page 20)

When the mother asks—

"Which vitamin drops should I use?" --
she looks to you for specific advice.
And when you specify easy-to-take
Vi-Penta® Drops 'Roche,' you know
they are dated to ensure full
potency...they contain synthetic
vitamin A plus seven other vitamins
(including B_6)...and they taste good.

Especially
for pediatric
infectious —

When you prescribe Gantrisin®(acetyl)
Pediatric Suspension 'Roche,' you may
be sure of two things: 'It really tastes
good -- so good even sick children take
it gladly -- and it offers wide-spectrum
antibacterial therapy that is usually
well tolerated.



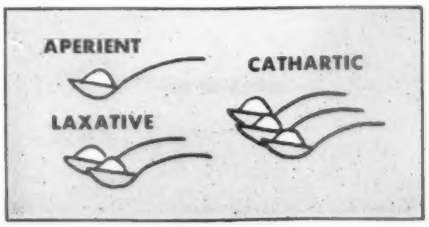
SAL HEPATICA® ACTS SO PROMPTLY BECAUSE...

SAL HEPATICA'S Action Has a Sound Pharmacologic Basis

1. It is antacid and effervescent. Reduction of gastric acidity decreases emptying time of the stomach.[1]

Effervescent mixtures also shorten the emptying time.[2]

Thus SAL HEPATICA quickly leaves the stomach to enter the intestine where its laxative action takes place.



2. It stimulates intestinal peristalsis by its osmotic action. The fluid drawn into the intestine is a mechanical stimulus to evacuation, which usually follows promptly.

Prompt, gentle laxation without griping follows the use of pleasant-tasting SAL HEPATICA. The gastric hyperacidity so frequently accompanying constipation is relieved, too, because SAL HEPATICA is antacid.

References:

1. The Physiological Basis of Medical Practice. 1945. p. 486.
2. New England J. Med. 235:80, July 18, 1946.

ANTACID, EFFERVESCENT, SALINE LAXATIVE

BRISTOL-MYERS CO., 19 West 50 Street, New York 20, New York

American Medical Women's Association, Inc.

JUNIOR BRANCH OFFICERS, 1954-1955

UNIVERSITY OF ALABAMA

President: Maude Dieseker, 800 South 20th Street, Birmingham, Alabama.
Secretary: Betty Jean McBride, 800 South 20th Street, Birmingham, Alabama.

UNIVERSITY OF ARKANSAS

President: Leslie Ann Buchanan, University of Arkansas School of Medicine, Little Rock.
Secretary: Betty Lowe, 824 East 11th Street, Little Rock.

HAHNEMANN MEDICAL COLLEGE

President: Lois Newman, 108 North Mole Street, Philadelphia 2, Pa.
Secretary: Bertha Webster, 1621 Race Street, Philadelphia 2, Pa.

HOWARD UNIVERSITY

President: Roselyn E. Payne, Howard University, Washington, D.C.
Secretary: J. Gwendolyn Gordon, 1919 Third Street, N.W., Washington, D.C.

GEORGE WASHINGTON UNIVERSITY

President: Virginia Duggins, 2354 North Quincy, Arlington, Va.
Secretary: Kathryn Williams, 1610 19th Street, N.W., Washington, D.C.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.

1790 Broadway New York 19, N.Y.

APPLICATION FOR JUNIOR MEMBERSHIP

Name .....

Date .....

Address (Present) .....

Address (Permanent) .....

(Please check address to which the JOURNAL and AMWA correspondence are to be mailed.)

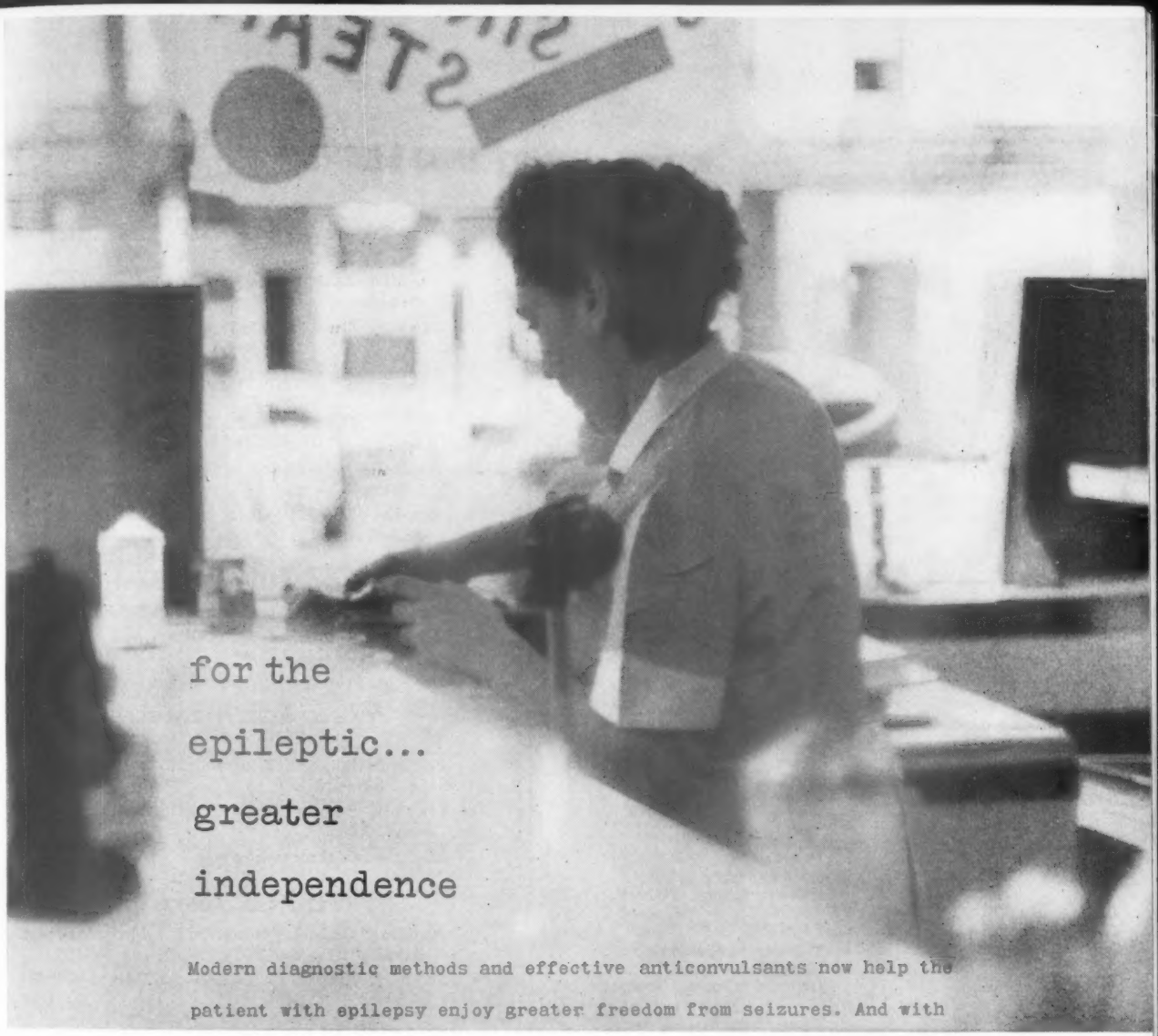
Medical School ..... Year of graduation .....

Place of expected internship .....

Date and place of birth .....

Junior membership does not require payment of dues.

Signature .....



for the
epileptic...
greater
independence

Modern diagnostic methods and effective anticonvulsants now help the patient with epilepsy enjoy greater freedom from seizures. And with a more understanding society, greater independence is assured.

DILANTIN® SODIUM (diphenylhydantoin sodium, Parke-Davis)
an established anticonvulsant of choice, alone or in combination, for control of grand mal and psychomotor seizures -- without the handicap of somnolence.

DILANTIN Sodium is supplied in a variety of forms -- including Kapseals® of 0.03 Gm. (½ gr.) and 0.1 Gm. (1½ gr.) in bottles of 100 and 1,000.

Parke, Davis & Company
DETROIT, MICHIGAN

in everyday practice

PENICILLIN
still the antibiotic of first choice for common infections . . .

REINFORCED BY

TRIPLE SULFONAMIDES
to increase antibacterial range and reduce resistance . . .

Three strengths:
125M, 250M, 500M

Each tablet contains:
Penicillin G Potassium, Crystalline 125,000 (or 250,000 or 500,000) units
Sulfadiazine . . . . . 0.167 Gm.
Sulfamerazine . . . . 0.167 Gm.
Sulfamethazine . . . . 0.167 Gm.

Supplied:
Scored tablets in bottles of 50.
Biosulfa 125M also available in bottles of 500.

® TRADEMARK, REG. U. S. PAT. OFF.

Upjohn

THE UPJOHN COMPANY, KALAMAZOO, MICHIGAN

American Medical

BRANCH OFFICERS

TWENTY (BLACKWELL), DETROIT, MICHIGAN

President: Louisa Piccone, M.D., 10605 West Warren, Detroit.

Secretary: Carol Platz, M.D., 11368 Kelly Rd., Detroit 24.

Meetings held five times a year.

TWENTY-THREE, LOS ANGELES, CALIFORNIA

President: Anita Gelber, M.D., 1052 West 6th Street, Los Angles 14.

Secretary: Virginia Pallais, M.D., 14536 Hamin, Van Nuys.

TWENTY-FOUR, KANSAS

President: Mary T. Glassen, M.D., Phillipsburg.

Secretary: Ruth P. Spiegel, M.D., Formosa.

Next meeting will be held on call.

TWENTY-FIVE, PHILADELPHIA, PENNSYLVANIA

President: Elizabeth B. Brown, M.D., 1930 Chestnut St., Philadelphia.

Secretary: Dorothy Shindell, M.D., 5501 Greene St., Philadelphia.

Meetings held three times a year.

TWENTY-SIX, MINNESOTA

President: Catherine Burns, M.D., Medical Center, Albert Lea.

Secretary: Hilda H. Luck, M.D., 531 North 4th St., Mankato.

TWENTY-NINE, ATLANTA, GEORGIA

President: Elisabeth Martin, M.D., 56 Fifth Street, N.E., Atlanta, Ga.

Secretary: Ruth McClure, M.D., 756 Cypress Street, N.E., Atlanta.

Meetings held third Saturday, alternate months.

THIRTY, UPPER CALIFORNIA

President: Roberta F. Fenlon, M.D., 490 Post St., San Francisco.

Secretary: Anah C. Wineberg, M.D., 3120 Webster St., Oakland 9.

THIRTY-ONE, MISSISSIPPI

President: Eva L. McLorn, M.D., 964 N. State St., Jackson.

Secretary: Ruth R. Burroughs, M.D., 2912 N. State St., Jackson.

Women's Association

1954-1955—(Continued)

THIRTY-TWO WESTERN NORTH CAROLINA

Acting President: Margery J. Lord, M.D., Health Department, Asheville.

Secretary: Louise Galloway, M.D., 25 Arthur Rd., West Asheville.

THIRTY-THREE, FLORIDA

President: Rose E. London, M.D., 1085 Dade Blvd., Miami Beach.

Secretary: Charlotte Wolkins, M.D., 748 N.E. 127th St., North Miami.

THIRTY-FOUR ARKANSAS

President: Elizabeth D. Fletcher, M.D., 705 Donoghey Bldg., Little Rock.

Secretary: Martha M. Brown, M.D., State Hospital, Little Rock.

THIRTY-FIVE, PUERTO RICO

President: Alice Reinhardt, M.D., Santorio Insula, Rio Piedros.

Secretary: Maria Amelia Pares, M.D., Professional Building, Santurce.

THIRTY-SIX, ALAMEDA COUNTY, CALIFORNIA

President: Miriam Rutherford, M.D., 2929 Summit St., Oakland.

Secretary: Dorothy McDonald, M.D., 2490 Channing Way, Berkeley.

THIRTY-SEVEN, SEATTLE, WASHINGTON

President: Phyllis Leibly, M.D., 4530-51st St., N.E., Seattle.

Secretary: Lily E. Schoffman, M.D., 828 Fourth and Pike Bldg., Seattle.

THIRTY-EIGHT, LONG BEACH, CALIFORNIA

President: Laurel Weibel, M.D., 5211 Arbor Rd., Long Beach 8.

Secretary: Sybil Haire, M.D., 911 E. San Antonio Dr., Long Beach 7.

THIRTY-NINE, BOSTON, MASSACHUSETTS

President: Dera Kinsey, M.D., 134 Wellesley St., Weston.

Secretary: Marion Perry, M.D., 88 Scotland Rd., Reading.

FORTY, DALLAS, TEXAS

President: Mary A. Jennings, M.D., 4210 Lemmon, Dallas.

Secretary: Nina Fay Calhoun, M.D., 1532 Medical Arts Bldg., Dallas.

in refractory or relapsing cases

ERYTHROMYCIN
the antibiotic of choice against resistant Gram-positive cocci . . .

REINFORCED BY

Triple Sulfonamides
to cover Gram-negative bacteria and to potentiate the erythromycin . . .

Each tablet contains:
Erythromycin . . . . . 100 mg.
Sulfadiazine . . . . . 0.083 Gm.
Sulfamerazine . . . . 0.083 Gm.
Sulfamethazine . . . . 0.083 Gm.

Supplied:
Protection-coated tablets in bottles of 50 and 500.

*TRADEMARK

Upjohn

THE UPJOHN COMPANY, KALAMAZOO, MICHIGAN

not an estrogen
but not anti-estrogenic

Today, caution surrounds *indiscriminate* use of estrogenic hormone therapy.

ERGOAPIOL (Smith) with SAVIN, containing the total alkaloids of ergot, induces well-defined physiological effects without disturbing endocrine balance. It is remarkably free from side actions. Indications are those of ergot.

MARTIN H. SMITH CO. • 150 LAFAYETTE ST., N. Y. 13, N. Y.

ERGOAPIOL (SMITH) WITH SAVIN

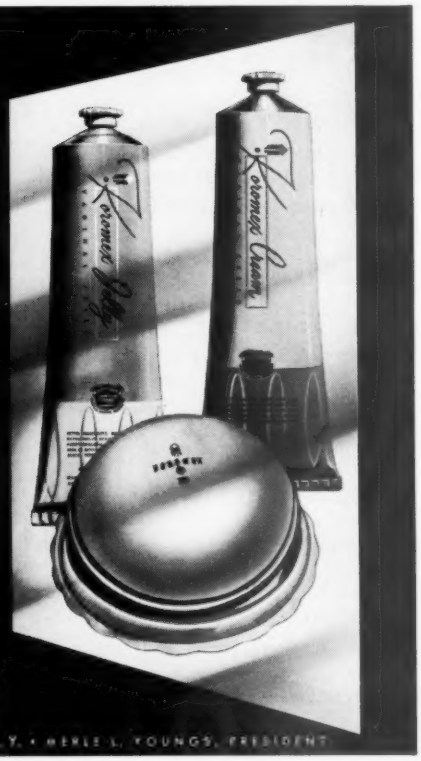
Literature and Complimentary Package on request
— on professional stationery, please.

reflection of

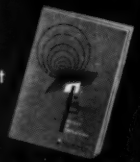
RELIABILITY...

HR Koromex

ACTIVE INGREDIENTS: BORIC ACID 2.0%; OXYQUINOLIN BENZOATE 0.02%; AND PHENYLMERCURIC ACETATE 0.02% IN SUITABLE JELLY OR CREAM BASES

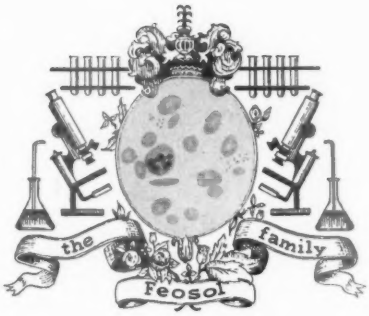


Send for this unusual free booklet



HOLLAND-RANTOS COMPANY, INC. • 145 HUDSON STREET, NEW YORK 13, N.Y. • MERLE L. YOUNGS, PRESIDENT

the FEOSOL* family



the most positive

treatments for the

most common deficiencies

'FEOSOL' TABLETS	the standard therapy for simple iron-deficiency anemias
'FEOSOL' ELIXIR	for iron-deficiency anemias of infancy and childhood
FEOJECTIN*	the safe, rapid-action *intravenous* iron for clear-cut iron-deficiency anemias where a prompt response is mandatory
FEOSOL PLUS*	the ideal iron-vitamin formula for the patient who is both iron deficient and vitamin deficient
'FEOSOL HEMATONIC'	the potent, B_{12}-containing hematinic for microcytic and most macrocytic anemias

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off.

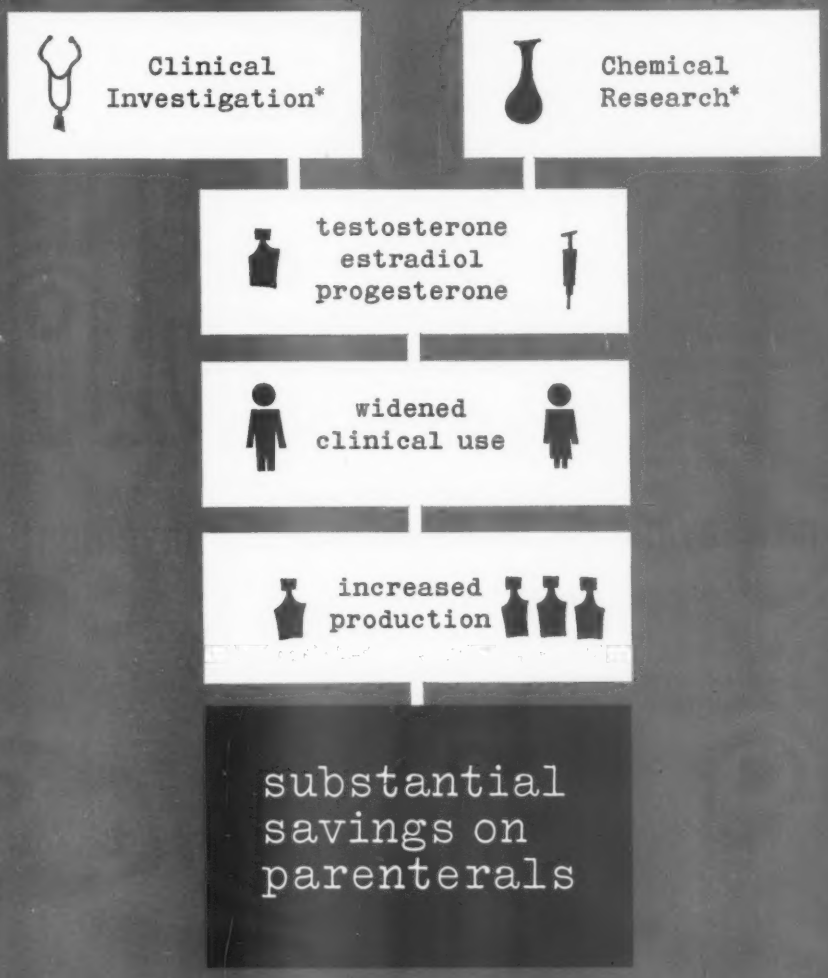
International Correspondents

Africa, South	Dr. Marie Van Castricum	*Johannesburg*
Argentine	Dra. Ines L. C. de Allende	*Cordoba*
Australia	Dr. Mary C. Puckey	*Sydney*
Austria	Dr. Lore Antoine	*Vienna*
Belgium	Dr. Michotte-Ronse	*Bruxelles*
Brazil	Dra. Maria Paumbartten Deane	*Pará*
Burma	Dr. Yin May	*Rangoon*
Canada	Dr. Ruth Johnstone-Harvey	*Olds, Alberta*
Chile	Dra. Maria Alvarez Arnold	*Valparaiso*
China, East	Dr. Tsae N. Kwong	*Shanghai*
China, North	Dr. Marion Yang	*Peking*
China, South	Dr. H. H. Huang	*Canton*
Cuba	Dra. Gilda Peraza	*Habana*
Czechoslovakia	Dr. Vlasta Kaladova di Lotti	*Praha*
Denmark	Dr. Agnete Heise	*Copenhagen*
England	Dr. Georgiana Bonser	*Leeds*
England	Dr. Dorothy Anderton-Sharpe	*London*
Finland	Dr. Anni Seppanen	*Helsinki*
France	Dr. Gauthier-Villars	*Paris*
Germany	Dr. Gabriele Strecker	*Frankfurt*
Guatemala	Dra. Maria Isabel Escobar	*Guatemala City*
Haiti	Dr. Yvonne G. Silvain	*Port au Prince*
Hungary	Dr. Vilma Sebesta	*Budapest*
Iceland	Dr. Kristjana H. Olafsson	*Hafnarfirdi*
India, North	Dr. D. N. Jayakar	*Lucknow*
India, South	Dr. Hilda Lazarus	*South Vellore*
Iran	Dr. Miriam Fahimi	*Teheran*
Israel	Dr. Helen Kagan	*Jerusalem*
Italy	Dr. Maria Selvini	*Milan*
Korea	Dr. Rhoda Kim Pak	*Chunchan*
Mexico	Dra. Alicia Gallaga Romero	*Anahuac*
Mongolia	Mother Mary Franciscus, M.D.	*Ninghia*
Morocco	Dr. Lucia Servadio Bedarida	*Tangier*
Netherlands	Dr. Ada Middelhoven	*Amsterdam*
New Zealand	Dr. Helen Deem	*Dunedin*
North Ireland	Dr. F. Mary Erskine	*Belfast*
Norway	Dr. Herdis Gundersen	*Oslo*
Pakistan	Dr. Z. Nasiruddin	*West Punjab*
Panama	Dra. Lidia G. Soganderes	*Santa Tomas*
Peru	Dra. Imelda Lindo de Soriano	*Lima*
Philippines	Dr. Fe del Mundo	*Manila*
Portugal	Dr. Nair de Azevedo	*Lisbon*
Scotland	Dr. Mary Esslemont	*Aberdeen*
Spain	Dr. Alicia Fernandez Calvet	*Galicia*
Sweden	Dr. Andrea Andreen	*Stockholm*
Switzerland	Dr. Ilse Schnabel	*Zurich*
Thailand	Dr. Pierra Vejjabul	*Bangkok*
Tripolitania	Dr. Clelia Lollini	*Tripoli*
Turkey	Dr. Perihan Cambel	*Ankara*

Schering

the pioneer in hormone research and manufacture

Progress in Hormone Therapy



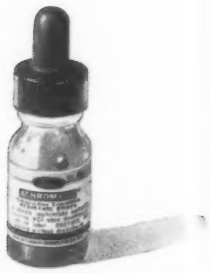
*Approximately 400 clinical reports on the use of Schering ethical products were published in scientific periodicals during 1953.

ORETON® testosterone propionate

PROGYNON® estradiol

PROLUTON® progesterone

SPERSOIDS*: *50 mg. per teaspoonful (3 Gm.)*
Dispersible Powder



PEDIATRIC DROPS: *Cherry flavor. Approx. 5 mg. per drop. Graduated dropper.*

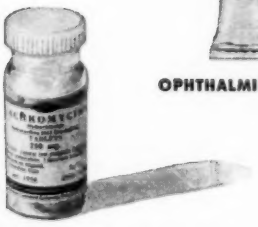
OINTMENT *(3%)*

ORAL SUSPENSION: *Cherry flavor. 250 mg. per 5 cc. teaspoonful.*

ACHRO

now available in these many convenient forms:

OPHTHALMIC OINTMENT *(1%)*



TABLETS: *250 mg., 100 mg., 50 mg.*

CAPSULES: *250 mg., 100 mg., 50 mg.*

INTRAVENOUS: *500 mg., 250 mg., 100 mg.*

SOLUBLE TABLETS: *50 mg.*

INTRAMUSCULAR: *100 mg.*

ROMYCIN*

Tetracycline Lederle

EAR SOLUTION (*0.5%*)

ACHROMYCIN, the new broad-spectrum antibiotic, is now available in a wide range of forms for oral, topical and parenteral use in children and adults. New forms are being prepared as rapidly as research permits.

ACHROMYCIN is definitely less irritating to the gastro-intestinal tract. It more rapidly diffuses into body tissues and fluids. It maintains effective potency for a full 24-hours in solution.

ACHROMYCIN has proved effective against a wide variety of infections including those caused by Gram-positive and Gram-negative bacteria, rickettsia, and protozoan organisms.

*REG. U.S. PAT. OFF.

LEDERLE LABORATORIES DIVISION *AMERICAN Cyanamid COMPANY* Pearl River, N.Y. Lederle

GOOD WILL TO MEN

ATOMS FOR PEACE

"I believe truthfully, that the conquest of atomic energy may be widely used to produce not destruction but an age of plenty for the human race."

ENRICO FERMI, *physicist*
who made revolutionary discoveries in the innermost recesses of the atom.

"It is reasonable to anticipate that tapping this new source of energy will cause profound changes in our present way of life. Accordingly, it is hereby declared to be the policy of the people of the United States that, subject at all times to the paramount objective of assuring common defense and security, the development and utilization of atomic energy shall, so far as is practicable, be directed toward improving the public welfare, increasing the standard of living, strengthening free competition in private enterprise, and promoting world peace."

CHARTER, ATOMIC ENERGY ACT, 1946

"Allow all peoples of all nations to see that, in this enlightened age, the great powers of the earth, both of the East and the West, are interested in human aspirations first rather than in building up the armaments of war.

"... in the hearts of men everywhere be they governed or governors, may decisions be made which will lead this world out of fear and into peace."

PRESIDENT DWIGHT D. EISENHOWER
Address before the United Nations, Dec. 8, 1953

"It is especially fit that we, as a group of influential women, should first inform ourselves on the subject of the use of atomic energy for peaceful means, then pass the information to others, and so do something to bring the dream of world peace a little closer to reality."

CAMILLE MERMOD, *President*,
American Medical Women's Association Inaugural Address, June 20, 1954

ELECTRON PHOTOMICROGRAPH

Klebsiella pneumoniae 39,000 X

Klebsiella pneumoniae (Friedländer's bacillus) is a Gram-negative, capsulated organism commonly involved in various pathologic conditions of the nose and accessory sinuses, in addition to bronchopneumonia and bronchiectasis.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

AMERICAN MEDICAL WOMEN'S ASSOCIATION

December 15, 1954

Dear Medical Student:

If you have scanned page 18, where our Junior Branch officers are listed, you have noted that a number of groups of students like yourself have become so enthused over the purposes and work of our Association that they have taken advantage of the privilege of joining as Junior Members.

The program of the American Medical Women's Association kindles their interest, as it does mine, and that prompts me to urge you to affiliate, as early as possible, with this organization in which you will desire active membership once you are engaged in medical practice.

We would like to welcome you to this fellowship with the coming of the New Year.

Sincerely yours,
ELIZABETH S. KAHLER, M.D.
Director of Junior Membership

WHAT IS JUNIOR MEMBERSHIP IN THE AMERICAN MEDICAL WOMEN'S ASSOCIATION?

It is affiliation with the only organization whose members are exclusively women physicians. It leads to eligibility for Associate Membership upon graduation; it leads to Active Membership after the first year of practice.

There are three classes of Junior Membership:

Some Juniors are Members-at-Large.

Some are Junior Members of a Senior Branch.

Other Juniors enjoy the prestige of a Junior Branch at their own medical school.

WHO MAY BECOME A JUNIOR MEMBER?

You may, if you are a student in one of the four undergraduate years of an approved medical school.

You could apply by using the Junior Membership blank printed monthly in the JOURNAL (this month on page 18), or

You might write direct to Dr. Elizabeth S. Kahler, Director of Junior Membership, 312 Fulton Street, N.W., Washington, D.C., who will send application blanks and, if you wish, information on how to organize a Junior Branch in the event that several of your fellow students would like to join you in forming one; or

You could clip and mail the regular AMWA membership application from page 37 in this issue.

JUNIOR MEMBERSHIP PRIVILEGES ARE—

To carry the distinctive AMWA Junior Membership card;

To share in AMWA program activities and fellowship with Senior members;

To receive monthly the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION.

START THE NEW YEAR AS A JUNIOR MEMBER OF THE AMWA!
JUNIOR MEMBERS PAY NO DUES

There's this about Coke ...

"It's my gift for thirst"

Leave it to old Santa —he knows the importance of choosing Christmas presents to fit the occasion. He knows something about refreshment, too. This merry world traveler could tell you that ice-cold Coca-Cola is the perfect gift for thirst —in Mombasa, in Rome, in Rio . . . or where you live.

Drink
Coca-Cola
REG. U.S. PAT. OFF.

See EDDIE FISHER on "Coke Time" NBC Television twice each week.

COPYRIGHT 1954, THE COCA-COLA COMPANY

"COKE" IS A REGISTERED TRADE-MARK

consider
ILOTYCIN
(ERYTHROMYCIN, LILLY)
FIRST
5 reasons why
1 UNEXCELLED ANTIBIOTIC SPECTRUM
'Ilotycin' is effective against over 80 percent of all bacterial infections; yet the bacterial balance of the intestine is not significantly disturbed.
2 NOTABLY SAFE
No allergic reactions to 'Ilotycin' have been reported in the literature. Staphylococcus enteritis, anorectal complications, moniliasis, and avitaminosis have not been encountered.
3 KILLS PATHOGENS
'Ilotycin' is bactericidal in generally prescribed dosages.
4 CHEMICALLY DIFFERENT
Virtually no gram-positive pathogens are inherently resistant to 'Ilotycin'—even when resistant to other antibiotics.
5 ACTS QUICKLY
Acute infections yield rapidly.
Available in tablets, pediatric suspension, and I.V. ampoules.
Average adult dose: 200 mg. every four to six hours.
Lilly
ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U. S. A.

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

VOLUME 9 DECEMBER 1954 NUMBER 12

Clinical Experience With Anticoagulant Therapy*

Helen I. Glueck, M.D.

THIRTEEN YEARS have elapsed since the introduction of dicumarol® to the medical profession.[1,2,3] During this interval certain indications for the use of the anticoagulant drugs have become more or less accepted. Other uses are still under violent debate, particularly the indications and contraindications for use of the drugs in patients with myocardial infarction. The present communication represents my personal experience while following a series of patients with thromboembolic disease both in the hospital and in a consultative capacity. In no sense should this report be considered a comprehensive review of this large and important field. One cannot be dogmatic about a subject still in a state of flux.

Phlebothrombosis and Thrombophlebitis of the Deep Venous System. It would appear that the anticoagulant drugs have their greatest usefulness in the treatment of phlebothrombosis and early thrombophlebitis of the deep venous system of the legs. The high incidence of this complication in surgical and medical practice is well known. It is not known if this increased incidence of venous disease and its dread sequela, pulmonary embolus, is the result of increasing awareness of the disease, the older age of our population, the types of radical surgery now undertaken, or other more obscure causes. It has even been inferred that the widespread use of antibiotics has increased the incidence of these complications.[4]

It is difficult to separate rigidly phlebothrombosis from thrombophlebitis. The former state of the bland thrombosis slips imperceptively into the latter, where clinical signs of edema, pain, swelling, and fever make the diagnosis obvious. It is true that the danger of emboli is far greater in the earlier stage of the disease, namely, with bland thrombosis; however, occasionally, emboli have occurred when the leg is hot, swollen, and painful. The anticoagulant drugs are of greatest usefulness in the early stages of deep venous thrombosis or phlebothrombosis. When the clot is relatively small its spread can be prevented by adequate anticoagulant therapy. The danger of emboli diminishes as time progresses. During the first few days of therapy, dicumarol alone should not be depended on since it is relatively ineffectual until the prothrombin concentration is at therapeutic levels. At the very time the dicumarol is ineffective, the intravascular clot is propagating widely. The combined use of heparin and dicumarol is indicated early in the disease from the time the diagnosis is made until the dicumarol becomes effective, usually by the fourth to the sixth day. One of the advantages of the more rapidly acting drugs, for example, 2-Phenyl-1, 3-indandione, (hedulin®), is that this early period of therapeutic ineffectiveness is shortened, and heparin need not be used routinely.

One cannot always be certain of the diagnosis of

*From the May Institute of Medical Research and the Department of Medicine, The Jewish Hospital Association, Cincinnati, Ohio.

Dr. Glueck is Assistant Professor, Department of Medicine, University of Cincinnati, College of Medicine, and Research Associate, May Institute for Medical Research, Jewish Hospital Association.

deep thrombophlebitis early in the disease. The temperature need not be elevated nor the pulse rapid. Calf pain on palpation may be so minimal as to be doubted by the observer. Of help is the localization of the pain. It is almost always localized in the midline of the calf, extending downwards from the popliteal space, occasionally as far as the Achilles tendon. If the area of most intense pain is a few centimeters lateral to the midline, or if pressure on the belly of the gastrocnemius muscle produces more intense pain than that observed with midline pressure, the diagnosis is unlikely. Pain in the femoral canal of the upper portion of the leg is a more obvious indication of this condition. Pain is often the only early sign present. It may persist alone for a few days and then become associated with edema, swelling, and the classic signs of phlebitis. The pain may disappear spontaneously or appear in the opposite leg. Occasionally the first signs of phlebothrombosis are heralded by the classic signs of pulmonary infarction, namely, cough, pleuritic pain, bloody sputum, fever, electrocardiographic and roentgen ray changes. However, many of these signs may be absent in the presence of proven infarct. The seriousness of pulmonary infarction demands immediate therapy.

It is most important to determine if treatment is indicated in the patients with minimal evidence of phlebothrombosis or thrombophlebitis. It is my clinical impression that it is better to treat patients on suspicion rather than to wait until classic signs appear. True, an occasional patient will be treated unnecessarily. However, so many patients, if untreated, will develop classic symptoms subsequently that the optimum period for therapy will have been missed while waiting for symptoms to become manifest. In patients with minimal symptoms, 10 days of anticoagulant therapy are usually sufficient. The risk of such treatment to the patient is less than the danger of emboli. Certain patients should arouse suspicion, namely, the obese, elderly or inactive patient, the patient suffering from malignant disease, or a patient immobilized in a cast or traction. Pregnancy predisposes to thrombophlebitis as does almost any major surgical procedure. Patients who have previouly had thrombophlebitis are likely to have recurrences. Nevertheless, the disease often appears in patients who do not fit into any of these categories.

The danger to life from pulmonary emboli is emphasized in the literature. Less mention is made of the sequelae of untreated thrombophlebitis: edema, pain, and the persistent general discomfort associated with impaired venous return. One of the most gratifying results of early treatment is the prevention of these annoying symptoms.

Even with adequate and early anticoagulant therapy, a small percentage of patients will show extension of the process, repeated pulmonary emboli, and a generally unsatisfactory course. Surgery is indicated in those patients who have had one or more pulmonary emboli after adequate anticoagulant therapy had been maintained, or in whom involvement of the opposite leg appears while satisfactory levels of the drug are maintained. Ligation in such cases often involves both femoral veins and, occasionally, if the pelvic veins are involved, it must be performed as high as the inferior vena cava.[5] Following surgery, anticoagulant therapy should again be instituted since thrombosis may extend beyond the site of the ligation.[5] Certain authorities recommend routine anticoagulant therapy for prophylaxis in patients undergoing extensive surgery.[6,7] A more conservative course would suggest careful daily examination of the extremities, and the commencement of therapy at the onset of suspicious symptoms. If a patient requiring major surgery has had thrombophlebitis within a period of six months or a year, anticoagulant therapy following surgery is indicated. Further clinical experience should help to delineate more clearly just which patient should have the drug for prophylaxis.[8]

Anticoagulant therapy has been unsatisfactory in patients with saphenous thrombophlebitis associated with varicosities.[9] Although the drug appears to stop the thrombosing process locally, soon after discontinuing the therapy the thrombosis may reappear and even extend. An exception to the above statement is to be found in the occasional patient in whom there appears to be rapid upward extension from the saphenous vein. In such cases, anticoagulants should be used to stop the extension into the deeper venous system. When the process is temporarily arrested, the drugs are then discontinued and saphenous ligation undertaken. In general, however, surgical therapy of superficial venous thrombosis is more satisfactory than treatment with anticoagulant drugs.[9] The vein, with its injured lumen, incompetent valves, and tortuous course, is so prone to repeated thrombosis that no permanent improvement from medical management should be expected.

Penicillin is of value only when cellulitis is associated with varicosities or thrombophlebitis. It is not indicated in phlebothrombosis, or in the usual case of thrombophlebitis of the leg.

Chemical thrombosis produced in the upper extremity by means of drugs or intravenous therapy is annoying and painful. However, since the intima of the vessel is usually injured by the sclerosing solutions, mural thrombi are well attached. The

collateral circulation of the arm is good and the risks of emboli are minimal. Under certain conditions, however, emboli from the arm veins have been reported.[10] Careful observation, with the use of antibiotic therapy if cellulitis is present, will usually suffice.

Peripheral Arterial Occlusion. In no other emergency is there greater need for co-operation between the surgeon and internist than in the treatment of acute arterial occlusion. Embolectomy followed by anticoagulant therapy has produced a marked reduction in the mortality rate, and has permitted increased salvage of the extremity. Speed is the essence of success in embolectomy; if more than 10 hours lapse after the symptoms begin, surgery probably will be ineffective.[5] Following surgery, heparin should be given, followed by dicumarol. The initial causes of the emboli, for example the fibrillating heart with mitral stenosis, or the infarcted myocardium with mural thrombi, deserve the closest attention. Conversion of the fibrillation to normal rhythm must be considered. More detailed discussions of the problems of arterial occlusion can be found in standard texts.[8,9]

A word of caution should be mentioned regarding the simultaneous use of lumbar sympathetic block and dicumarol. Hemorrhage at the site of the block has been reported in a considerable number of cases.[11,12] The use of vasodilating drugs would appear safer if anticoagulant drugs are being used.

The use of dicumarol in patients with auricular fibrillation associated with multiple emboli has been of great help in controlling this serious complication.[13,14] After the maintenance dosage of the drug has been determined, the prothrombin time need be measured only once a week or twice monthly. Many patients have been maintained on the drug for a period of several years. If cerebral emboli of cardiac origin occur, anticoagulant drugs are not contraindicated. Cerebral thrombosis per se, however, does not seem to be improved by anticoagulant therapy. There is still much to be learned regarding the effects of dicumarol on the brain. From a practical standpoint, anticoagulant drugs are employed in neurologic cases if there are indications that the cerebral lesions are embolic in nature.

If fibrillation has been present for some time and attempts are being made at conversion to a regular sinus rhythm, it is useful to give the patient dicumarol for a few days before, during, and after attempts at conversion are undertaken. The chance of emboli occurring when the rhythm is altered can thus be avoided.[15]

The anticoagulant drugs have been of questionable value in superficial migratory thrombophlebitis. As with saphenous thrombophlebitis, beneficial effects are often noted only while the drug is being given, and new areas of thrombosis are apt to occur on discontinuing the drug. A high incidence of superficial migratory thrombophlebitis may occur in Buerger's disease; but this condition is likewise often associated with obscure visceral carcinoma, and may be the first indication of this disease.[16,17]

Myocardial Infarction. The evidence for the use of anticoagulant drugs in myocardial infarction is difficult to obtain since so many variable factors contribute to the mortality and morbidity of this disease.[18-21] Results therefore are less clear cut than those obtained in venous or occlusive arterial disease. Hence, opinions regarding the indications for these drugs range from the routine use of anticoagulant drugs in all patients, as advocated by Wright and his associates,[22] to the limitations of the drugs to bad risk patients, as recommended by Russek and others,[23] and the complete abolition of the therapy as advocated by Evans.[24] At best, anticoagulant therapy can affect the outcome in patients with myocardial infarction in only two important respects. Ideally, the drugs should prevent emboli from mural thrombi or from venous thrombosis which is often associated with myocardial infarction, and should prevent the extension of the thrombolic process in the coronary arteries.

It is even more difficult to assess the role of these factors, namely emboli or extension of the infarct, in the final evaluation of the mortality and morbidity of myocardial infarction. The risk of fatal emboli appears greater in the older, more acutely ill patient, in patients with shock, congestive failure,[25] or a history of previous occlusion; but emboli can and do occur at any age.[26] Since emboli play only one role in affecting the final outcome in myocardial infarction, it is easy to see why, statistically, mortality appears to be only moderately influenced by anticoagulant therapy. Hellerstein and Martin[26] have indicated with careful autopsy studies that the clinical diagnosis of embolization is overlooked more often than it is made. Until recently little attention has been paid to the autopsy material in patients receiving dicumarol. The few extensive studies of such material indicate that the incidence of mural thrombi is reduced by adequate therapy, that the incidence of venous thrombosis is likewise reduced, and that death from emboli appears to be diminished by the drugs, even though the risk from hemorrhage must be counterbalanced against these gains.[27,28,29] It is my present opinion that the evidence against the drugs is inconclusive, that a definite advantage has accrued from the use of the drugs in the prevention of embolic complications, and that,

if adequate laboratory control is available, the drugs should be used routinely in the treatment of myocardial infarction.

It is even more difficult to determine if the drugs are of value in continuous long term therapy in patients who have had several previous infarctions. Preliminary studies, however, have indicated that the drugs may be of some value in such cases.[20,21] The final answer to this important problem awaits the test of time.

Contraindications to the Use of Anticoagulant Drugs. The contraindications to the use of anticoagulant drugs are fairly clear cut. The single, most important contraindication to the use of dicumarol is inadequate laboratory control of prothrombin determinations. If careful evaluation of prothrombin is not obtainable, it is better not to utilize dicumarol at all but to depend on heparin, and surgical procedures. It is extremely important to run a control prothrombin test on normal plasma along with the dicumarolized blood, otherwise true values may not be obtained.

It is agreed that the drugs should not be used in patients with liver disease, blood dyscrasias, or local bleeding elsewhere as for example hemorrhoids, bleeding fibroids, or patients with frequent hypertensive nosebleeds. A history of a recent bleeding peptic ulcer within a year of therapy is likewise a contraindication to the use of the drug. It has been thought that uremia is a contraindication to the use of dicumarol, but Sachs[22] has recently shown that there is no more bleeding in uremic than in nonuremic patients.

Pregnancy has been considered a contraindication to the use of dicumarol since Quick[32] has shown that cerebral hemorrhage occurs in the litters of pregnant dogs given dicumarol. Several recent reports have questioned this finding in the pregnant human patient.[24,25,28] I treated 2 acutely ill pregnant patients with heparin-dicumarol. The first, a primipara, three months pregnant, had a ruptured appendix and septic thrombophlebitis with multiple pulmonary emboli. Therapy was pushed aggressively for three weeks. The second, a multipara, six months pregnant, had a threatened abortion followed by massive bilateral thrombophlebitis and two pulmonary infarcts before treatment was instituted. Both patients had normal deliveries of viable infants who subsequently gave no evidence of cerebral involvement. Nevertheless, until more is known about the effect of the drugs on the fetus, anticoagulant therapy should be reserved only for the severely ill pregnant patient, in whom the disease is a definite threat to life.

There is no danger in using the drugs as early as 12 hours after delivery, if thrombophlebitis is already present, or developing. The only instances of massive hemorrhage I have encountered in the postpartum patients are those with fibroid uteri or a history of abnormal menstrual periods associated with menorrhagia. Since dicumarol is not transmitted to the milk of the nursing mother, infants can be breast-fed.[37] Metrorrhagia has likewise been observed in patients who have had extensive cauterization of the cervix. Menstruation per se is no contraindication to the drugs, provided that normally menorrhagia is not present.

In my experience dicumarol has been ineffectual in preventing the thrombosis commonly associated with polycythemia vera. Two such patients were observed and treated with adequate amounts of dicumarol. Both patients expired. Autopsy revealed that the first patient had a myocardial infarct with mural thrombi and cerebral, mesenteric, and femoral arterial occlusions, the emboli appearing to be of different ages. In the second patient with thrombophlebitis, autopsy demonstrated multiple pulmonary emboli likewise of different ages. It is possible that heparin might prove more effective in this disease than dicumarol since it affects the clotting mechanism in a different manner than does dicumarol.

Choice of Drugs. Space does not allow for a detailed description of the use of the various drugs which interfere with the coagulation of the blood. Detailed techniques of administration are described by Wright[38] for both heparin and dicumarol. Newer drugs are constantly being developed which may offer considerable advantage.

Heparin is an older drug in point of service.[39] It has several advantages. Its effect is almost immediate and hence it is of value where an immediate result is desired. Its destruction is likewise rapid so that it must be given at frequent intervals. It is ineffectual when given orally.[39] The intravenous route, perhaps the most effective method of administration, requires repeated dosage or the use of a continuous drip. Heparin in retarding media requires a large dose, its administration causes some pain, and it produces local hematoma.[40] The dosage requirements are extremely variable.[41] Concentrated aqueous heparin is of value in that it can be given subcutaneously, or intramuscularly at frequent intervals.[42,43,44] Its absorbtion by these routes varies somewhat from patient to patient. By whatever route heparin is given, its effect should be checked by frequent clotting time determinations.[44] There is no standard dose of heparin, the range being as wide as 200 to 600 mg. per diem. Heparin is an extremely effective anticoagulant since it affects the

clotting mechanism at several sites including the conversion of prothrombin to thrombin and the conversion of fibrinogen to fibrin by thrombin.[23]

Dicumarol is administered orally, a distinct advantage for prolonged therapy. Response to the drug is quite variable. The usual dose is 300 mg. the first day, 200 mg. the second day, and the subsequent maintenance dose determined by daily prothrombin times. Detailed dosage schedules have been described in numerous publications.[5,9,28] Dicumarol affects clotting mechanism by reducing the prothrombin and stable factor (S.P.C.A.,[45] convertin) of the blood. Hemorrhage can occur at so called therapeutic levels, namely 15 to 30 percent of normal concentration; but it is more common when the prothrombin falls below such levels. Therefore careful laboratory control is imperative. Since dicumarol requires three to six days to become effective and an immediate anticoagulant is often required, heparin and dicumarol can be given simultaneously until the prothrombin time reaches satisfactory levels.

Recently several new anticoagulants have been introduced. Tromexan®[46] and hedulin®[47] have a more rapid effect than dicumarol, and hence the use of heparin may sometimes be avoided. The dosage of tromexan is very large and absorption somewhat erratic. An even newer preparation, coumadin sodium (wafarin®) is a cumarol derivitive which can be given intravenously and has a rapid and prolonged effect on the prothrombin time.[48]

It is safer for the clinician to learn to use and understand one drug thoroughly rather than to attempt to master all the preparations. The possibility of hemorrhage must never be neglected, and vitamin K1 must always be at hand as an antidote. The emulsified preparations of K1 (mephyton®) appear particularly satisfactory.[49]

Further developments will undoubtedly follow several lines: better understanding of the basic pathophysiology of vascular disease; prediction tests for the presence of thrombosis; enzymatic digestion of fibrin clots; and safer, more effective anticoagulants. It is hoped that by these methods further progress will be made toward the more effective treatment of thrombo-embolic disease.

References

[1]Bingham, J. B., Meyer, O. O., and Pohle, F. J., Studies on hemorrhagic agent 3,3' methylenebis (4-hydroxycoumarin); its effect on prothrombin and coagulation time of blood of dogs and humans, Am. J. M. Sc. **202:** 563-578, Oct. '41.

[2]Butt, H. R., Allen, E. V., and Bollman, J. L., Preparation from spoiled sweet clover [3,3'-methylenebis-(4-hydroxycoumarin)] which prolongs coagulation and prothrombin time of blood; preliminary report of experimental and clinical studies, Proc. Staff Meet. Mayo Clin. **16:** 388-395, June 18, '41.

[3]Prandoni, A., and Wright, I., Anticoagulants; heparin and the dicoumarin-3,3' methylene-bis-(4-hydroxycoumarin), Bull. New York Acad. Med. **18:** 433-458, July '42.

[4]Ochsner, A., DeCamp, P. T., and DeBakey, M. E., Venous thrombosis, Ann. West. Med. & Surg. **5:** 704-708, Aug. '51.

[5]Collens, W. S., and Wilensky, N. D., Peripheral Vascular Diseases, Diagnosis and Treatment, Springfield, Ill., C. C Thomas, ed. 2, 1953, p. 478.

[6]Barker, N. W., Cromer, H. E., Hurn, M., and Waugh, J. M., Use of dicumarol in prevention of postoperative thrombosis and embolism with special reference to dosage and safe administration, Surgery **17:** 207-217, Feb. '45.

[7]Wise, W. D., Loker, F. F., and Brambel, C. E., Effectiveness of dicumarol prophylaxis against thromboembolic complications following major surgery; a four year survey: 3,304 cases, Surg., Gynec. & Obst. **88:** 486-494, 1949.

[8]Milch, E., Bernard, L., and Egan, R., Use of bishydroxycoumarin, (dicumarol) for prevention of postoperative thromboembolism, A. M. A. Arch. Surg., **67:** 142-152, Aug. '53.

[9]Allen, E. V., Barker, N. W., and Hines, E. A., Jr., Peripheral Vascular Diseases, Philadelphia, W. B. Saunders Co., 1946, p. 664.

[10]Tomlin, C. E., Pulmonary infarction complicating thrombophlebitis of upper extremity, Am. J. Med. **12:** 411-421, April, '52.

[11]Nichol, E. S., Risk of hemorrhage in anticoagulant therapy, Ann. West. Med. & Surg. **4:** 71-81, Feb. '50.

[12]Cole, F., and Kleitsch, W. P., Incompatability of lumbar block and anticoagulant therapy, J.A.M.A. **147:** 1233-1234, Nov. 24, '51.

[13]Askey, J. M., and Cherry, C. B., Thromboembolism associated with auricular fibrillation; continuous anticoagulant therapy, J.A.M.A. **144:** 97-100, Sept. 9, '50.

[14]Cosgriff, S. W., Prophylaxis of recurrent embolism of intracardiac origin; protracted anticoagulant therapy on ambulatory basis, J.A.M.A. **143:** 870-872, July 8, '50.

[15]Goldman, M. J., Quinidine treatment of auricular fibrillation, Am. J. M. Sc. **222:** 382-391, Oct. '51.

[16]Fisher, M. M., Hochberg, L. A., and Wilensky, N. D., Recurrent thrombophlebitis in obscure malignant tumor of lung; report of 4 cases, J.A.M.A. **147:** 1213-1216, Nov. '24, '51.

[17]Barker, N. W., Thrombophlebitis complicating infectious and systemic diseases, Proc. Staff Meet., Mayo Clin. **11:** 513-517, Aug. 12, '36.

[18]Sigler, L. H., Prognosis of angina pectoris and coronary occlusion: follow-up of 1,700 cases, J.A.M.A. **146:** 998-1004, July 14, '51.

[19]Katz, L. N., Mills, G. Y., and Cisneros, F., Survival after recent myocardial infarction, Arch. Int. Med. **84:** 305-320, Aug. '49.

[20]Master, A. M., Dack, S., and Jaffe, H. L., Age, sex, and hypertension in myocardial infarction due to coronary occlusion, Arch. Int. Med. **64:** 767-786, Oct. '39.

[21]Schnur, S., Mortality rates in acute myocardial infarction 1. The normal yearly variation, and the ef-

fect of hospital admission policy, Ann. Int. Med. **39:** 1014-1017, Nov. '53.
[22]Wright, I. S., Marple, C. D., and Beck, D. F., Report of Committee for Evaluation of Anticoagulants in Treatment of Coronary Thrombosis with Myocardial Infarction, (progress report on statistical analysis of first 800 cases studied by this committee), Am. Heart J. **36:** 801-815, Dec. '48.
[23]Russek, H. I., and others, Indications for bishydroxycoumarin (dicumarol) in acute myocardial infarction, Circulation **5:** 707-711, May '52.
[24]Evans, W., Anticoagulant therapy in coronary occlusion, Proc. Roy. Soc. Med. **47:** 318-323, May '54.
[25]Levinson, D. C., and Griffith, G. C., Evaluation of anticoagulant therapy in congestive heart failure, Circulation **4:** 416-419, Sept. '51.
[26]Hellerstein, H. K., and Martin, J. W., Incidence of thromboembolic lesions accompanying myocardial infarction, Am. Heart J. **33:** 443-452, April '47.
[27]Wright, I. S., Beck, D. F., Marple, C. D., Myocardial infarction and its treatment with anticoagulants, summary of findings for 1,031 cases, Mod. Concepts Cardiovas. Dis. **23:** 208-212, Jan. '54.
[28]Burton, C. R., Anticoagulant therapy of recent cardiac infarction, Canad. M. A. J., **70:** 404-408, April '54.
[29]Howell, D., and Franklin, A. K., The effect of anticoagulant therapy upon the development of mural thrombosis following myocardial infarction, Ann. Int. Med. **40:** 694-697, April, '54.
[30]Nichol, E. S., and Borg, J. F., Long-term dicumarol therapy to prevent recurrent coronary artery thrombosis, Circulation **1:** 1097-1104, May '50.
[31]Keyes, J. W., Drake, E. H., James, T. N., and Smith, F. J., Survival rates after myocardial infarctions with and without long term anticoagulant therapy, Am. J. M. Sc. **226:** 607-610, Dec. '53.
[32]Sachs, J. J., and Henderson, R. R., Use of bishydroxycoumarin (dicumarol) in presence of impaired renal function, J. A. M. A. **148:** 839-841, March '52.
[33]Quick, A. J., The Physiology and Pathology of Hemostasis, Philadelphia, Lea & Febiger, 1951, p. 78.
[34]Adamson, D. L., Weaver, R. T., and Jaimet, C. H., New view on use of dicumarol in pregnant patient, Canad. M. A. J. **61:** 6-10, July '49.
[35]Mansell, R. V., Antepartum dicumarol therapy, Am. J. Obst. & Gynec. **64:** 155-161, July '52.
[36]Brambel, C. E., Fitzpatrick, V. de P., and Hunter, R. E., Protracted anticoagulant therapy during the antenatal period, Tr. New England Obst. & Gynec. Soc. **5:** 27-45, '51.
[37]Brambel, C. E., and Hunter, R. E., Effect of dicumarol on nursing infant, Am. J. Obst. and Gynec. **59:** 1153-1159, May '50.
[38]Wright, I. S., Vascular Diseases in Clinical Practice, Chicago, Year Book Publishers, 1952.
[39]Murray, D. W. G., Jacques, L. B., Perrett, T. S., and Best, C. H., Heparin and thrombosis of veins following injury, Surgery **2:** 163-187, Aug. '37.
[40]Glueck, H. I., Podore, C. J., and Levinson, J. E., Efficiency of heparin in retarding media on maintenance of decreased coagulability of blood, Circulation **2:** 530-535, Oct. '50.
[41]de Takats, G., Subcutaneous use of heparin; summary of observations, Circulation **2:** 837-844, Dec. '50.
[42]Baker, D. V. Jr., Warren, R., and Belko, J. S., Deep subcutaneous administration of concentrated heparin; observations of 15 patients, New England J. Med. **244:** 436-438, March 22, '51.
[43]Stats, D., and Neuhof, H., Concentrated aqueous heparin; new form of intramuscular administration, Am. J. M. Sc. **214:** 159-162, Aug. '47.
[44]Hauch, E. W., and Barker, N. W., Experiences with heparin: comparative effects of intravenous and subcutaneous administration in same individuals, J. Lab. & Clin. Med. **38:** 550-556, Oct. '51.
[45]Alexander, B., Goldstein, R., and Landwehr, G., Prothrombin conversion accelerator of serum (SPCA): its partial purification and its properties compared with serum AC-globulin, J. Clin. Investigation **29:** 881-895, July '50.
[46]Burke, G. E., and Wright, I. S., Tromexan-3,3'-carboxymethylenebis (4 hydroxycoumarin) ethyl ester; experimental and clinical properties, Circulation **3:** 164-170, Feb. '51.
[47]Blaustein, A., Shnayerson, N., and Wallach, R., Clinical use of a new anticoagulant phenylindanedione, Am. J. Med. **14:** 704-706, June '53.
[48]Nichol, E. S., Phillips, W. C., and Jenkins, V. E., Anticoagulants in coronary heart disease, M. Clin. North America **38:** 399-412, March '54.
[49]Stragnell, R., and Ware, A. G., Mephyton (emulsified vitamin K1) in treatment of excessive therapeutic hypoprothrombinemia, M. Clin. North America **38:** 413-417, March '54.

Congenital Anomalies

Marjorie A. Grad, M.D.

An anomaly is a departure from normal structure or standard. The term may be used interchangeably with defect, malformation, deformity, or abnormality. Congenital anomalies are those malformations of the human fetus whether structural or functional which are present at birth and are owing to some influence during gestation or up to the moment of birth. Inborn anomalies are those influenced by heredity.

Congenital anomalies were recorded on clay tablets in Assyria as early as 668-626 B.C.[1] Pliny wrote, "Nature creates monsters for the purpose of astonishing us, and amusing herself." Shakespeare,[2] in "King Lear," referred, it is believed, to deformities associated with German measles as "The foul fiend Flibbertigibbet, who gives the web and pin (cataract), squints the eye, and makes harelip."

Malformations occur in 1 to 2 percent of all births. Mall,[3] one of the foremost investigators of embryology, gives an incidence of 0.65 percent. Malpas,[4] in a study of 13,964 births at Liverpool Maternity Hospital from 1923 to 1932, gives an incidence of 2.1 percent. During a 10 year period, 1943 to 1953, at the Cincinnati Deaconess Hospital, there were 9,006 deliveries. The total number of anomalies was 176, or 1.95 percent. In a similar study[5] at the University of Maryland covering a five year period, there were 147 anomalies, or 1.75 percent, in 8,365 deliveries (see Table).

TABLE. COMPARISON OF MAJOR ANOMALIES

	Univ.of Maryland (8,365)	1.75%	Cinc. Deaconess (9,006)	1.95%
Hydrocephalus	Twin 1	10		10
Anencephalus	Twin 1	5		10
Monster		1		3
Spina bifida		0		3
Afrontocrodolicocephalus		1		0
Total Number		17		26

Dr. Grad is on the staff of the Deaconess Hospital; courtesy staffs of the Good Samaritan, St. Mary's, Bethesda, and Children's Hospitals in Cincinnati; and is in general practice.

One hundred and fifty minor anomalies occurred in the Deaconess Hospital survey. They may be summarized as follows:

Club feet	26
Meningocele	6
Cleft palate and harelip	13
Urogenital deformities	6
Cardiac deformities	6
Gastroenteric deformities	7
Digital deformities	9
Mongolism	1
Miscellaneous	7
Multiple births (1 triplets, 68 twins)	69

Of these 150 minor anomalies, 60, or 40 percent, could be corrected by surgical or orthopedic intervention. Twenty-eight, or 18 percent, required orthopedic intervention.

During the years 1938 to 1948 inclusive, the incidence of neonatal deaths owing to congenital anomalies at the University Hospital, Ann Arbor, was 13.57 percent; congenital anomalies were the third leading cause of neonatal death.[6] They are now rated tenth among the principle causes of death for all age groups.

These anomalies may be of genetic origin or acquired in the process of development by disturbances in fetal metabolism or environment.[8,9,10] Even the period of labor and actual delivery has its hazards. What of prematurity and its stigma of fibrolental hyperplasia, asphyxia, and mental retardation; forceps and brain injury; or traction trauma and paralysis?

After the first 7 days of embryonic life, the period of development of organs and organ systems begins. It is possible that a change in environment at a specific time results in a specific abnormality. Swan[7] and his associates found that an infection in a mother occurring at an average of 1.5 months produced cataracts in the fetus and at 2.1 months produced deaf mutism. The period for maximum lens development is 4 to 8 weeks and for the internal ear it is 7 to 10 weeks. It is believed that the infection (virus) acts on the hyaloid artery in relation to the lens, and on the vessels of the organ of Corti in the ear.

Anomalies of the skull, extremities, and central

nervous system have been attributed to "bleb" disturbances in fetal tissue, occurring as a result of irradiation.[8,9] In many higher vertebrates, the foramen anterius acts as a regulator of spinal fluid during the folding of the brain, and is obliterated during early prenatal life.[10] In abnormalities, the fluid escapes and forms blebs under the epidermis. The blebs migrate until they reach the eyes, snout, and so forth, and they interfere with normal development.

Another theory is that if a faulty gene affects a key cell such as an eosinophil cell of the anterior pituitary, then the thyroid, adrenal, and gonads may remain under-developed and dwarfism may occur.

CAUSES OF ANOMALIES[10a]

A. Genetic
   1. Dominant
   2. Recessive
   3. Sex-linked
B. Environmental
   1. Nutritional
   2. Infective
   3. Irradiational
   4. Mechanical
   5. Defective of fertilization
   6. Endocrine

Genetics is a field of study in itself. In brief, dominant malformations appear in every generation and will be transmitted from the affected parent to one half of the children. In the case of the recessive characteristic, the individual has one normal gene and one carrying the defect. If he or she mates with a normal person, normal offspring will result. However, if they mate with others like themselves (heterozygous) one fourth of the children will show the pathologic trait. In the case of sex-linked genes, certain factors carried by the male are transmitted by the females, who are themselves not affected.

Adequate nutrition is essential for normal development.[11] Faulty implantation of the ovum, disease of the placenta, interruption of umbilical blood flow, and diet are included. In placenta previa and ectopic pregnancy, the incidence of anomalies is greater. Under controlled experimental or natural conditions, deficiencies of specific nutritional elements, vitamins and minerals, in a maternal diet may produce malformations.[12] If the deficiency is too great, it will result in embryonic death and abortion.[13] Rats fed riboflavin deficient diets produced embryos with multiple skeletal malformations.[14] Those fed vitamin A deficient diets produced offspring with ocular disturbances either because of severe xerophthalmia or owing to constriction of the optic nerve as a result of disproportion of growth between the central nervous system and the surrounding bone (optic foramen).[15] Endemic iodine deficiency may result in cretinism. Lambs fed copper deficient diets also produced defective offspring. Congenital rickets as a result of vitamin D deficiency should be mentioned.[16,17] The incidence of anomalies was observed during World War II in the Netherlands, where severe nutritional deficiency existed. It was found that the rate of conception was affected, as was the miscarriage rate and the incidence of anomalies.

In 1941, Gregg,[18,19] an Australian ophthalmologist, noted the injurious effects on the newborn, particularly congenital cataract, following an epidemic of German measles. He found that when a mother had German measles in the first trimester of her pregnancy, in almost 100 percent of cases the infant showed one of the following: congenital cataract, deaf mutism, cardiac defects, microcephalus, microphthalmus, or dental defects. More recent investigators[20,21] have agreed that deformity occurs in the newborn in 80 percent of cases when the mother has had German measles in the first two months of pregnancy. When measles was contracted after the first two months of pregnancy, only 10 to 20 percent of cases showed defect. Mumps,[22] another virus disease, has been studied and further reports may indicate that this disease in the first trimester may produce similar effects. It is not known whether or not the virus changes the metabolic conditions or acts on vascular tissue. Toxoplasmosis,[23] a rare protozoan disease, results in anomalies of the brain and spinal cord such as internal hydrocephalus, microcephalus, chorioretinitis, and calcification of the brain.

Erythroblastosis[24] is included here although it is not related to an infection. Spina bifida, hydrocephalus, and so forth are forty times more common in erythroblastotic babies. Isosensitization and interference of circulation to localized areas result in harelip, cleft palate, and spina bifida.

Many people still believe syphilis is a cause of malformations. The author believes that the untreated disease may produce a localized lesion with destruction of tissue, and a resulting abnormality. Adequate treatment of the mother prevents the development of abnormalities.

Roentgen rays and radium act to interrupt fetal growth and embryonic differentiation. Abnormalities and miscarriages have been noted after exposure during the first trimester. The dose of irradiation and the stage of fetal development at which exposure occurs are important. Sensitivity of cells varies directly with the reproductive capacity and inversely with the degree of differentiation (Bergone-Tribondeau Law). Aschenheim and Zappert[25] observed that women who received irradiation during the first trimester for uterine myomata produced

infants with the following defects, namely, microcephalus, microphthalmus, and optic nerve defects. Goldstein and Murphy[26] observed 70 cases of postconceptional radium and roentgen ray exposure and noted 37.35 percent of these women had infants with mental or physical abnormalities. The effects of the atom bomb on the next four to five generations may help to answer this question.

Mechanical factors of uterine environment such as pressure from uterine fibroids, stasis of position, and rotation of the fetus with formation of amniotic bands have been considered factors in producing amputations and abnormalities of limbs and club feet. Caffey[27] reported bowing of the extremities owing to intrauterine pressures. Club foot has been noted in oligohydramnios.

The older the mother,[28] the greater the chance for mongolism. Advanced age of the endometrium may cause faulty nutrition even though the ovum is normal. In the guinea pig,[29] pathologic embryos are a result of late fertilization. If fertilization is delayed over 20 hours after ovulation, embryos are abnormal and if delayed for more than 32 hours, no development occurs.

Diabetic mothers produce abnormal offspring five to seven times more often than nondiabetic mothers. The most frequent abnormality in diabetic patients is a large baby with pituitary disease.[30] Large doses of insulin may affect the development of the baby. Zwilling[31] found that when insulin was given to chick embryos within two days of incubation, defects were caudal; later, shortening of the legs occurred. Diabetic mothers when given supplementary estrogen and progesterone in the first trimester produced a greater percentage of normal offspring.[32] Abnormalities in gonad structure may be responsible for endocrine imbalance such as hermaphroditism, but this abnormality is probably associated with gene factors.

What then is the cause of certain anomalies? Is it genetic or environmental or a combination of both? In rats, correction in dietary deficiencies does not produce normal offspring in all instances, but often it produces an increase in abnormal young. Some believe that if genetic factors are not favorable for reproduction, an increase in defects will occur. In the other cases, rotation of the fetus in embryonic life may result in amputation. A previous protoplasmic defect may have existed or exposure to irradiation may have destroyed certain fetal cells producing an abnormality.

Conclusions

1. Anomalies are now tenth in the list of principle causes of death in all age groups.

2. Every physician should have a comprehensive understanding of the causes of anomalies and their hereditary implications. With this knowledge, he can: instruct the pregnant mother regarding an adequate diet; avoid unnecessary exposure of the mother to irradiation during pregnancy; and explain the dangers of certain infectious diseases during the first trimester of pregnancy and institute immune globulin therapy when exposure to German measles has occurred.

Case Report

A primigravida, aged 27, gave birth to a male infant. Forty-eight hours after birth the child developed an intestinal obstruction. At surgery, an obstruction of the bowel was found at the ileocolic junction, with collapse of the proximal ileum. The terminal ileum was resected, but the infant died on the sixth day.

Two years later, this mother was delivered of a female infant. Since it was a hand presentation, podalic version was necessary to initiate delivery. This infant died on the second day from intracranial hemorrhage.

Another male infant was delivered two years later. On the third day this infant had the signs of intestinal obstruction. At surgery, a volvulus was found with obstruction of the ileum at the junction of the cecum.

The fourth child was delivered three years later and at birth the abdomen appeared to be distended. At surgery, a- imperforate ileocecal valve was present.

The question always arises as to the cause of anomaly formation. Is it hereditary, or acquired? This series of four consecutive pregnancies with 3 infants having localized intestinal abnormalities would suggest a hereditary factor with specific predilection for the ileocolic junction. The second born child may have had a similar defect but succumbed before signs referable to the intestinal tract were apparent. If this intestinal condition were the result of a genetic factor then it would necessarily have been a dominant factor. There was no specific sex affected; no familial history was relevant to intestinal tract abnormality. This case, very alarming in its hereditary implications, should remind us that anomalies may be present, whether evident at birth or appearing later, and that anomalies, regardless of their nature, may occur in more than one offspring of the same parents.

References

[1]Garrison, F. H., An Introduction to the History of Medicine, Philadelphia, ed. 4, W. B. Saunders Co., 1920, p. 63.

[2]Shakespeare, W., King Lear Act III, sc. 4.

[3]Mall, F. P., in Curtis, A. H., Obst. & Gynec. Vol. 1, Philadelphia, W. B. Saunders Co., 1933, p. 545.

[4]Malpas, P., Incidence of human malformations and significance of changes in maternal environment in their causation, J. Obst. & Gynec. Brit. Emp. **44:** 434-454, June '37.

[5]Bull. School of Med., Univ. of Maryland **25:** 23-30, July '40.

[6]Ingalls, T. H., Study of congenital anomalies by epidemiologic method, with consideration of retrolental fibroplasia as acquired anomaly of fetus, New England J. Med. **243:** 67-74, July 20, '50.

[7]Swan, C., and others, Congenital defects in infants following infectious disease during pregnancy, M. J. Australia **2:** 201-210, Sept. 11, '43.

[8]Hobbs, A. A., Jr., Hereditary factors in multiple congenital deformities, report of 2 cases, Am. J. Roentgenol. **51:** 677-681, June '44.

[9]Engel, D., Etiology of multiple deformities, Am. J. Dis. Child. **60:** 562-579, Sept. '40.

[10]Bardeen, C. R., Foramen Anterius, Am. J. Anat. **11:** 419, '11.

[10a]Behrman, S., Genesis of fetal abnormalities, G P **6:** 41-48, Aug. '52.

[11]Warkany, J., Etiology of congenital malformations, Advances Pediat. **2:** 1-63, '47.

[12]Burke, B. S., Beal, V. A., Kirkwood, S. B., and Stuart, H. C., Nutrition studies during pregnancy, Am. J. Obst. & Gynec. **46:** 38-52, July '43.

[13]Boyd, J. D., and Hamilton, W. J., Abnormal Development and Foetal Death, in Bowes, K. ed: Modern Trends in Obstetrics and Gynecology, New York, Paul B. Hoeber, 1950, pp. 169-181.

[14]Eastman, N. J., Habitual Abortion, in Meigs, J. V., and Sturgis, S. H., ed.: Progress in Gynecology, New York, Grune & Stratton, 1946, pp. 262-268.

[15]Moore, L. A., Relationship between carotene blindness due to constriction of optic nerve, papillary edema and nyctalopia in calves, J. Nutrition **17:** 443-459, May '39.

[16]Warkany, J., Roth, C. B., and Wilson, J. G., Multiple congenital malformations, Am. J. Dis. Child. **75:** 470-472, March '48.

[17]Warkany, J., Roth, C. B., and Wilson, J. G., Multiple congenital malformations; consideration of etiologic factors, Pediatrics **1:** 462-471, April '48.

[18]Gregg, N. M., Congenital cataract following German measles in mother, Tr. Ophth. Soc. Australia (1941) **3:** 35-46, '42.

[19]Beswick, R. C., Warner, R., and Warkany, J., Congenital anomalies following maternal rubella, Am. J. Dis. Child. **78:** 334-348, Sept. '49.

[20]Wesselhoeft, C., Rubella (German measles) and congenital deformities, New England J. Med. **240:** 258-261, Feb. 17, '49.

[21]Patrick, P. R., Report of survey of children born in 1941 with reference to congenital abnormalities arising from maternal rubella, M. J. Australia **1:** 421-425, April 3, '48.

[22]Greenberg, M. W., and Beilly, J. S., Congenital defects in infant following mumps during pregnancy, Am. J. Obst. **57:** 805, April '49.

[23]Kite, J. H., Congenital deformities, Arch. Surg. **58:** 107-128, Jan. '49.

[24]Javert, C. T., Erythroblastosis neonatorum; obstetrical pathological study of 47 cases, Surg., Gynec. & Obst. **74:** 1-19, Jan. '42.

[25]Aschenheim and Zappert: Personal communication to authors—Goldstein and Murphy, Ref. 26.

[26]Goldstein, L., and Murphy, D. P, Etiology of ill-health in children born after maternal pelvic irradiation; defective children born after postconception pelvic irradiation, Am. J. Roentgenol. **22:** 322-331, Oct. '29.

[27]Caffey, J., Prenatal bowing and thickening of tubular bones, with multiple cutaneous dimple in arms and legs; congenital syndrome of mechanical origin, Am. J. Dis. Child. **74:** 543-562, Nov. '47.

[28]Bleyer, A., Rôle of advanced maternal age in causing mongolism; study of 2,822 cases, Am. J. Dis. Child. **55:** 79-92, Jan. '38.

[29]Blandau, R. J., and Young, W. C., Effects of delayed fertilization on development of guinea pig ovum, Am. J. Anat. **64:** 303-329, March '39.

[30]Barns, H. H. F., and Morgans, M. E., Prediabetic pregnancy, J. Obst. & Gynaec. Brit. Emp. **55:** 449-454, Aug. '48.

[31]Zwilling, E., Reversal of insulin-induced hypoglycemia in chick embryos by nicotinamide and α-Ketoglutaric acid, Proc. Soc. Exper. Biol. and Med. **71:** 609-612, Aug. '49.

[32]Smith, G. V., and Smith, O. W. Estrogen and progestin metabolism in pregnant women, with especial reference to pre-eclamptic toxemia and effect of hormone administration, Am. J. Obst. & Gynec. **39:** 405-422, March '40.

[33]Witschi, E., Modification of the Development of Sex in Lower Vertebrates and in Mammals, in Allen, E., ed.: Sex and Internal Secretions, ed. 2, Baltimore, Williams & Wilkins, Co., 1939, pp. 145-226.

A Review of Ballistocardiography*

Gwendolyn M. L. Morris, M.D.

ALTHOUGH BALLISTOCARDIOGRAPHY is not a new method of recording the forces imparted to the body by the heart beat, it has been only in recent years that considerable attention has been focused on it as a method of study in cardiac physiology and cardiovascular disease. This can be attested by the increasingly large volume of material which has been published on this subject in the past few years. The purpose of this paper is to present a brief review of the pertinent data in the field of ballistocardiography as known today.

As the heart ejects its blood into the great vessels, the resultant forces cause a displacement of the body. This fact can be demonstrated readily if one stands very still on a bathroom scales and observes the slight deflection of the pointer with each beat of the heart. When this movement is magnified and then recorded, the record is a ballistocardiogram. It is true that the heart is the prime factor in initiating the pulse wave, but the progression of the pulse wave through the arterial tree and the cardiac output, itself, are dependent in part on extracardiac factors. The cardiac output depends on the strength of ventricular systole and the diastolic filling of the heart. Tonus of the muscles as well as the changes in pressure gradient between the thorax and abdomen during respiration are important factors in aiding venous return to the heart. Changes in peripheral resistance may alter the ballistocardiogram. Thus, we must consider the circulation in its entirety and not focus our attention on the heart alone.

At the present time, there are essentially three varieties of instruments in use for obtaining ballistocardiograms. They vary in their frequency response and structure. One of the requirements in the design of the ballistocardiograph is that the natural frequency of the instrument must be far removed from the frequency of the object being recorded. Otherwise, resonance may result between the body and the recording system. In 1939, Starr and others[1] described the undamped high frequency table which has a frequency response of 10.5 cycles per second when loaded with 150 pounds of weight. The frequency response of this table is greater than the natural frequency of the human body which they found to average 5.7 c.p.s. Nickerson and his co-workers[2] developed a low frequency table with adjustable effective spring lengths and critical damping so that the frequency response is held at approximately 1.5 c.p.s. with the subject on the table. The third instrument now in use was developed by Dock and Taubman.[3] It is a portable instrument which rests on the shins of the subject, a high frequency, direct-body pickup ballistocardiograph. The instrument moves back and forth with the subject, and the motion of the instrument with reference to the table is picked up by photoelectric or electromagnetic methods and then fed into a suitable recorder.

Most instruments record displacement, but velocity curves and acceleration curves may also be obtained, although this usually is not done. It is beyond the scope of this paper to discuss the structure or theoretic advantages and disadvantages of these various instruments. This discussion will be limited to displacement records obtained from high frequency, horizontal ballistic tables; a large part of the original investigation and subsequent studies were done with this instrument. Also, unlike the critically damped low frequency instrument, the patient is not required to hold his breath while the record is obtained. Quiet breathing may be done when using a low frequency instrument, but there is considerable movement of the baseline, reduction in amplitude of ballistic waves, and alteration of wave form.

The greatest displacement of the body occurs in the head-to-foot direction, and the record of this

*From the Cardiac Laboratory, Department of Internal Medicine, University of Cincinnati, Cincinnati, Ohio.

Dr. Morris is a Trainee, National Heart Institute.

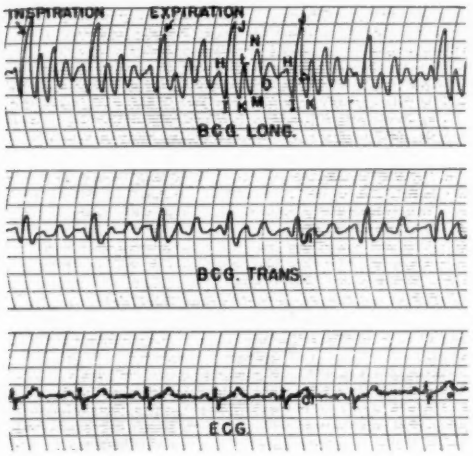


FIG. 1

Fig. 1. The above normal ballistocardiogram was obtained from a 29 year old healthy female. The longitudinal and transverse displacement tracings are recorded simultaneously with Lead I of the electrocardiogram. Note the wave pattern, amplitude of ballistic waves, and the normal respiratory variation. The waves are identified in one cycle.

displacement is the one best understood. By convention, an upward deflection on the paper records a movement in the headward direction, and a downward deflection records a movement in the footward direction. The initial upward deflection is called the H wave which begins at approximately the same time as the intrinsicoid deflection of the electrocardiogram. Thus, a simultaneously recorded electrocardiogram may be useful in identifying the ballistic waves. The H wave is followed by a slightly greater downward deflection, termed the I wave. This is followed by an upward deflection of still greater amplitude, the J wave, then a downward deflection, the K wave, which is usually as large as or larger in amplitude than the J wave. The K wave is followed by lesser important upward and downward deflections which are labeled in alphabetic order to the beginning of the next cycle with the appearance of the H wave.

A normal ballistocardiogram is reproduced (Fig. 1). This tracing was taken from a high frequency ballistic table which has about 10 percent added damping. The table has two degrees of freedom, permitting simultaneous recording of the longitudinal and transverse displacements. The design of this table has been described elsewhere.[4]

Starr,[5] in his studies in which he simulated systole in cadavers, was able to demonstrate many of the physiologic events concerned in the production of the ballistocardiogram. The results of his study also demonstrate that the amplitude of the principle ballistic waves is more closely related to the forces which produce them than to the cardiac output. Nickerson[6] has presented evidence suggesting that the H wave is produced by an impact from auricular systole. In most cases of auriculoventricular dissociation, the H wave is absent but auricular complexes are seen following each P wave. DeLalla and his associates[7] suggested that both auricular contraction and the apex thrust occurring during isometric contraction of the heart produce the H wave. It is difficult to explain the large H wave seen in coronary artery disease on this basis, and it is well known that patients with auricular fibrillation frequently do have H waves. Starr[8] has suggested that a large H wave may be produced by abnormal movement of blood within the heart, as into a ventricular aneurysm or into a noncontracting part of the heart when contraction of the more normal remainder begins. The resultant movement would change the heart's center of mass before any blood was ejected. Regardless of its cause, the H wave obscures the early cardiac recoil occurring with ventricular ejection. What is left of the footward recoil is represented by the I wave.

Probably the most conspicuous portion of the ballistocardiogram is the J wave. The headward displacement is related to the resultant forces produced by deceleration of blood at the bifurcation of the pulmonary artery and the aortic arch. In all probability, the K wave is caused by the abrupt deceleration of the impulse wave by the arteriolar peripheral resistance in the legs. The forces respon-

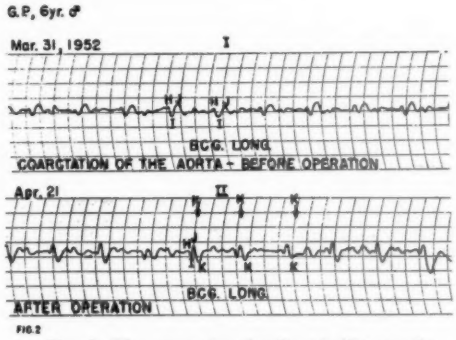


FIG. 2

Fig. 2. The upper longitudinal ballistocardiogram was recorded on March 31, 1952, from a 6 year old boy with coarctation of the aorta. The K wave is absent or very shallow and delayed in all the cycles. On April 10, 1952, an operation was performed with excision of the coarctation and an end-to-end anastomosis of the aorta. The lower tracing was taken on April 21, 1952. Note the appearance of deep K waves in the second tracing after correction of aortic coarctation.

sible for the subsequent waves are not known, but the "after waves" may be owing to standing waves reflected up and down the aorta during diastole. However, they may be modified in certain pathologic conditions, and, generally, they do not decrease gradually in amplitude as their distance from the K wave increases.

The ballistocardiogram may be abnormal in two ways: in the resting state, the amplitude of the waves may be too small or too large, or the wave may be abnormal in shape. There is variation in amplitude of the waves with respiration, increasing in amplitude during inspiration and decreasing in expiration. Normally, this variation is small, and the record becomes abnormal when the respiratory variation increases. The first trend toward abnormality is reduction in the size of the complexes during expiration. The abnormalities in wave pattern are not characteristic except for the large H wave seen in coronary artery disease; and the delayed short or absent K wave in the low frequency record shown by Jones and Goulder[9] to be characteristic of aortic coarctation, although this pattern is occasionally absent in some high frequency records. The K wave frequently returns after surgical restoration of the lumen. Absent K waves have also been observed in some cases of thrombosis of the abdominal aorta. A ballistocardiogram obtained from a patient with aortic coarctation is reproduced in Figure 2.

Deepening of the K wave occurs with hypertension, probably as a result of increased peripheral resistance and increased rigidity of arterial and arteriolar walls. There are no well established specific changes produced by valvular disease, but when the amplitude is reduced and the wave pattern is very irregular, it probably signifies serious myocardial damage. An abnormal record obtained from a patient with far-advanced coronary artery disease is reproduced (Fig. 3).

The ballistocardiogram will probably be of most value in studies of cardiac output and cardiac function, but at the present time, it serves as an adjunct to more conventional methods of study of cardiac physiology and cardiovascular disease. The reader is referred to the writings of Brown and others,[10] Scarborough and others,[11] and Braunstein[12] for a more complete discussion of the subject of ballistocardiography.

Summary

A brief summary of ballistocardiography is presented. The review includes a discussion of the various recording instruments, genesis of ballistic waves, and the normal and abnormal displacement ballistocardiograms.

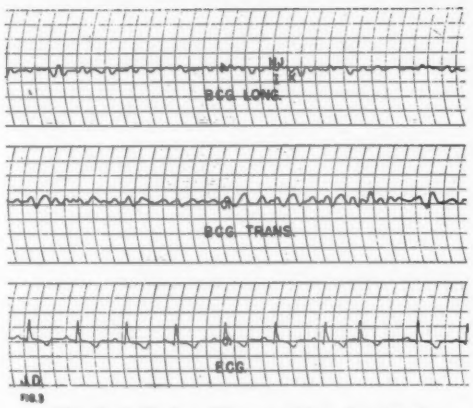


Fig. 3. J. D. is a 74 year old male with far-advanced coronary artery disease and angina pectoris who requires the frequent use of nitroglycerin. Note the low amplitude of the ballistic waves in the longitudinal record, increased respiratory variation, and the notching of the J waves (asynchronous contraction of the ventricles).

References

[1]Starr, I., Rawson, A. J., Schroeder, H. A., and Joseph, N. R., Studies on estimation of cardiac output in man, and of abnormalities in cardiac function, from heart's recoil and blood's impacts; ballistocardiogram, Am. J. Physiol. 127: 1-28, Aug. '39.

[2]Nickerson, J. L., Warren, J. V., and Brannon, E. S., Cardiac output in man; studies with low frequency, critically-damped ballistocardiograph, and method of right atrial catheterization, J. Clin. Investigation 26: 1-10, Jan. '47.

[3]Dock, W., and Taubman, F., Some techniques for recording ballistocardiogram directly from body, Am. J. Med. 7: 751-755, Dec. '49.

[4]Braunstein, J. R., Oelker, C. E., and Gowdy, R. C., Design of 2-dimensional ballistocardiograph, J. Clin. Investigation 29: 1219-1226, Sept. '50.

[5]Starr, I., Horwitz, O., Mayock, R. L., and Krumbhaar, E. B., Standardization of ballistocardiogram by simulation of heart's function at necropsy; with clinical method for estimation of cardiac strength and normal standards for it, Circulation 1: 1073-1096, May '50.

[6]Nickerson, J. L., Some observations on ballistocardiographic pattern, with special reference to H and K waves, J. Clin. Investigation 28: 369-377, March '49.

[7]deLalla, V., Jr., Epstein, M. H., and Brown, H. R., Jr., Analysis of H wave of ballistocardiogram, Circulation 2: 765-769, Nov. '50.

[8]Starr, I., Present status of ballistocardiogram, Ann. Int. Med. 37: 839-866, Nov. '52.

[9]Jones, R. J., and Goulder, N. E., Empiric approach to interpretation of low frequency, critically damped ballistocardiogram, Circulation 2: 756-764, Nov. '50.

[10]Brown, H. R., Jr., deLalla, V., Jr., Epstein, M. H., and Hoffman, M. J., Clinical Ballistocardiography, New York, The Macmillan Company, 1952.

[11]Scarborough, W. R., and others, Review of ballistocardiography, Am. Heart J. 44: 910-946 Dec. '52.

[12]Braunstein, J. R., The Ballistocardiogram, a Dynamic Record of the Heart Beat, Springfield, Ill., Charles C Thomas, 1953.

Rehabilitation and What It Means

Emily Hess, M.D.

WHAT IS MEDICAL rehabilitation and why has it come into being? The word "rehabilitation" has in recent years come to mean a way of handling chronically ill or permanently disabled patients so that they may learn to live as nearly normal lives as possible. The need for it has always been present but has become much more pressing with the advent of modern medical and surgical methods which save lives from diseases and injuries which were once fatal. Rehabilitation is often such a complicated and intricate procedure that it cannot be accomplished by the doctor alone. Of necessity, therefore, the team approach has evolved. This rehabilitation team consists of doctor, nurse, physical therapist, occupational therapist, social service worker, vocational counsellor, psychologist, speech therapist, and, at times, a psychiatrist. Not every patient, of course, requires the services of all of the members of a team. Those severely handicapped, such as paraplegics, often do; those less involved, as some patients who have had poliomyelitis, often do not.

A great many articles and books have been written about the excellent results which can be achieved by disabled persons who have the proper motivation and treatment. No attempt will be made in this article to review this work; rather, the reader is referred to the many excellent articles by Rusk* and his colleagues. Instead, I should like to point out the requirements and duties of the members of the rehabilitation team, including the patient himself who is the most important of all.

Unless the patient wants to become self-sufficient, the battle is often a losing one. But if motivation is adequate, even a severe quadriplegic can sometimes become a self-sustaining member of society. Young patients are frequently the easiest to rehabilitate because their motivation is strongest and their enthusiasm has not been dulled by too many unhappy experiences. Rehabilitation of the aged hemiplegic is often impossible because he may have been tired of fighting before he had his stroke and may feel that with this added burden the effort required is not worth the goal to be gained. Often he may be more realistic than we give him credit for.

Dr. Hess is Director of Physical Medicine and Rehabilitation, Drake Memorial Hospital; Acting Director of Physical Medicine and Rehabilitation, Cincinnati Veterans Hospital; and Attending Physician, University of Cincinnati, College of Medicine.

The rehabilitation physician must be a general practitioner with a thorough knowledge of neurology, cardiology, vascular disease, and endocrinology. He must be a good diagnostician and have a practical knowledge of psychiatry. In addition, he must have a knowledge of muscle kinesiology, therapeutic exercises, bracing, crutch walking, and wheel chair requirements. Of equal importance is his awareness of the manner in which the orthopedist and neurosurgeon can help his patients. As more physicians become aware of the results which can be achieved by this rounded approach, they will be willing to learn the techniques required.

The rehabilitation nurse has an equally important and involved responsibility. Her effort is in helping the patient to learn to do as much for himself as possible. This often requires much more skill and patience than does doing things for the patient. The nurse must be trained in the proper care of patients with neurologic diseases so that decubiti do not develop, and foot-drop or muscle contractures do not occur. This requires a knowledge of skin care, ways of avoiding pressure areas, proper application of foot boards, and range of motion exercises to keep joints free from stiffness. The graduate nurse must train her assistants, practical nurses, and attendants, to carry out certain phases of these activities. At least one nurse on each ward must be trained in helping the patient to acquire skill in as many of the activities of daily living (ADL) as his disability will permit. Obviously, rehabilitation techniques do not make the life of a nurse simpler. In a chronic disease hospital with a static population, once the training is done, the work required for individual patients is lessened; but in hospitals with a rapid turnover of patients the job is never finished.

To the physical therapist is entrusted the task of detailed muscle testing and development. The doctor necessarily spreads his energies over a wide field; consequently the therapist must work out proper exercises specifically to develop muscles which are

*Rusk, H. A., and Taylor, E. J., Living With a Disability, Blakiston, N.Y., 1953.

capable of improving. The therapist must train patients to walk properly using braces and crutches. She must also be proficient in training amputees to use their prostheses properly.

The occupational therapist's responsibilities fall into two realms. The first, that of training damaged muscles by useful creative work, directs exercise from the realm of conscious effort into that of unconscious, automatic activity. The second gives the patient something to do which is sufficiently interesting to take his mind off his troubles. In one patient, the first aim may be of paramount importance; in another, the second aim may mean the difference between success and failure in rehabilitation. The occupational therapist not only must know nerves and the muscles which they innervate but also must have in mind a wealth of work activities which employ the action of these nerves and muscles. Sometimes weaving or carving, woodworking or leather craft may be indicated. Often some special project must be invented. An important function, in addition to developing damaged muscle groups, is that of determining work tolerance and special vocational aptitudes. These can help the vocational counsellor immensely, and are often absolutely necessary before job placement or vocational training can be undertaken.

The vocational counsellor is adept at finding his patient's capabilities. He knows the employment facilities of his community, and the government agencies which will help in training and job placement of the handicapped. He also must be capable of educating employers as to the potentialities of handicapped workers. Many handicapped people can turn out just as good a day's work as a non-disabled person, and they are often particularly careful and dependable.

There are a number of agencies interested in getting the physically handicapped person back on the job. The most important one of these is the Department of Vocational Rehabilitation established in 1922 by the Federal Government with branches in each state. This agency has certain well defined requirements which must be met by a patient before he can qualify for aid in job training. It cannot be too strongly urged that every physician become acquainted with his state D.V.R. and what it can do for his patients.

It is apparent that the rehabilitation of a disabled person is a costly procedure. Few severely disabled individuals can afford the cost. The social worker, therefore, becomes a necessary member of the team. It is her duty to find out how much the patient can afford toward his care, and then to find proper agencies to supplement his funds. In large cities, unfortunately, she is often the only one who has close contact with the family; unfortunately, because thereby the doctor loses that important personal relationship with his patient and his problems which often spells the difference between success and failure in medical care. In smaller communities this loss of contact can be avoided, and must be avoided whenever possible; for unless there is one central guiding figure in this team, the patient feels that he may be lost in the maze.

In cases of brain damage, it is necessary to know the mental capacity of a patient so that proper evaluation can be made as to his possibilities for self-care and employment. Psychologists, therefore, are of great help in guiding the doctor, nurse, and vocational counsellor. Their opinion is often necessary before a patient can be accepted for help by D.V.R. or similar agencies.

Many people with brain injuries, both acquired, as in hemiplegia, or congenital, as in cerebral palsy, have speech difficulties. Often this speech problem may be the principal obstacle to improvement, and communication for them requires the aid of a person well trained in the techniques of speech therapy. This is a specialized field involving a knowledge of neurology as well as the mechanics of speech.

Many disabled persons feel insulted if asked to accept psychiatric care, usually because of the layman's mistaken idea that psychiatrists are of help only to insane people. The physician with a limited knowledge of psychiatry can usually help the patient better because he does not have this hurdle to jump. In many instances, however, the patient does require the services of a capable psychiatrist. To do his best work, this psychiatrist, like the rehabilitation doctor, must have a special knowledge of the problems of handicapped people.

All of this seems to be and is a time consuming, complicated, and expensive plan of treatment. But if, through these procedures, a patient with hemiplegia, multiple sclerosis, or cerebral palsy is enabled to take care of himself, a member of the family is released to gainful employment which obviates the necessity of a lifetime attendant. This obviously pays for itself in the long run. If, as is so often the case, a man or woman is returned to gainful employment who would otherwise be dependent on public or private financial support, then we feel our goal has been achieved.

Summary

The present day concept of rehabilitation is discussed. The necessity of complete understanding of the problem and co-operation of all concerned (the patient, doctor, nurse, physical and occupational therapist, vocational counsellor, social worker, and others) is explained.

CASE REPORTS

Duplication of the Small Intestine

Mary M. Clift, M.D.

A REVIEW of the American literature on duplication of the small intestine reveals that this anomaly occurs more frequently than has been suspected. Donovan[1,2] has operated on 6 patients during a period of 18 months and believes that this condition is one of the important causes of massive intestinal hemorrhage in infants. The duplicated intestine may also become obstructed. Perforation with local abscess or general peritonitis has been observed by Edwards,[3] and by Black and Benjamin.[4]

The duplication may occur at any level of the tract, but it occurs most commonly in the ileum. This anomaly is located on the mesenteric side of the true bowel situated between the leaves of the mesentery. Edwards,[3] Grove and Porch[5] reported cases of duplication occurring when a Meckel's diverticulum was also present on the antimesenteric border of the intestine.

The treatment of choice is excision with resection of the adjacent bowel. Ripstein[7] presented 4 cases of duplication of the small intestine with successful resection carried out in 2 patients. One patient died postoperatively of inanition complicated by secondary bacterial infection; the fourth patient who was one day old died eight hours postoperatively.

CASE REPORT

A 2½ year old white male was admitted to the Good Samaritan Hospital on July 17, 1952, because of blood-streaking of the feces.

Past History. In July 1950, the patient had been hospitalized for the study of melena which had been first noted by the mother three to four weeks prior to admission. Physical examination was unrevealing except for marked pallor. RBC was 1,530,000 and hemoglobin, 4 Gm. The bleeding and clotting times were normal. Roentgenologic studies of the upper and lower gastrointestinal tract disclosed only apparent failure of rotation of the small intestine. Proctoscopic examination showed no abnormality. While in the hospital, the patient passed a large amount of bright red blood on one occasion. He was treated with several small blood transfusions and was discharged after approximately three weeks.

Since January 1951, the mother had observed occasional blood-streaking of the feces; but the bowel habits remained normal. During the two weeks prior to admission, she saw fresh blood on the surface of the stool which was mixed with dark blood. For one week the boy had complained of generalized abdominal cramping pain.

Physical Examination. There was moderate pallor of the skin, nail beds, and conjunctivae. RBC was 2,770,000 and hemoglobin, 5.5 Gm. The bleeding and clotting times were within normal limits. Urine was normal. Roentgenograms were repeated with the same findings as previously observed.

Hospital Course. Several blood transfusions of 250 cc. each were given. The patient had a large tarry stool with streaks of bright red blood on the surface. A laparotomy was performed in July 1952. An indurated mass, the size of the palm of a hand, was found in the jejuno-ileal region. The surgeon's impression was that a duplication of the small intestine was present; a bowel resection was performed. A Meckel's diverticulum and the appendix, which was located in the left lower quadrant of the abdomen, were removed. The patient had an uneventful postoperative course and was discharged August 2, 1952.

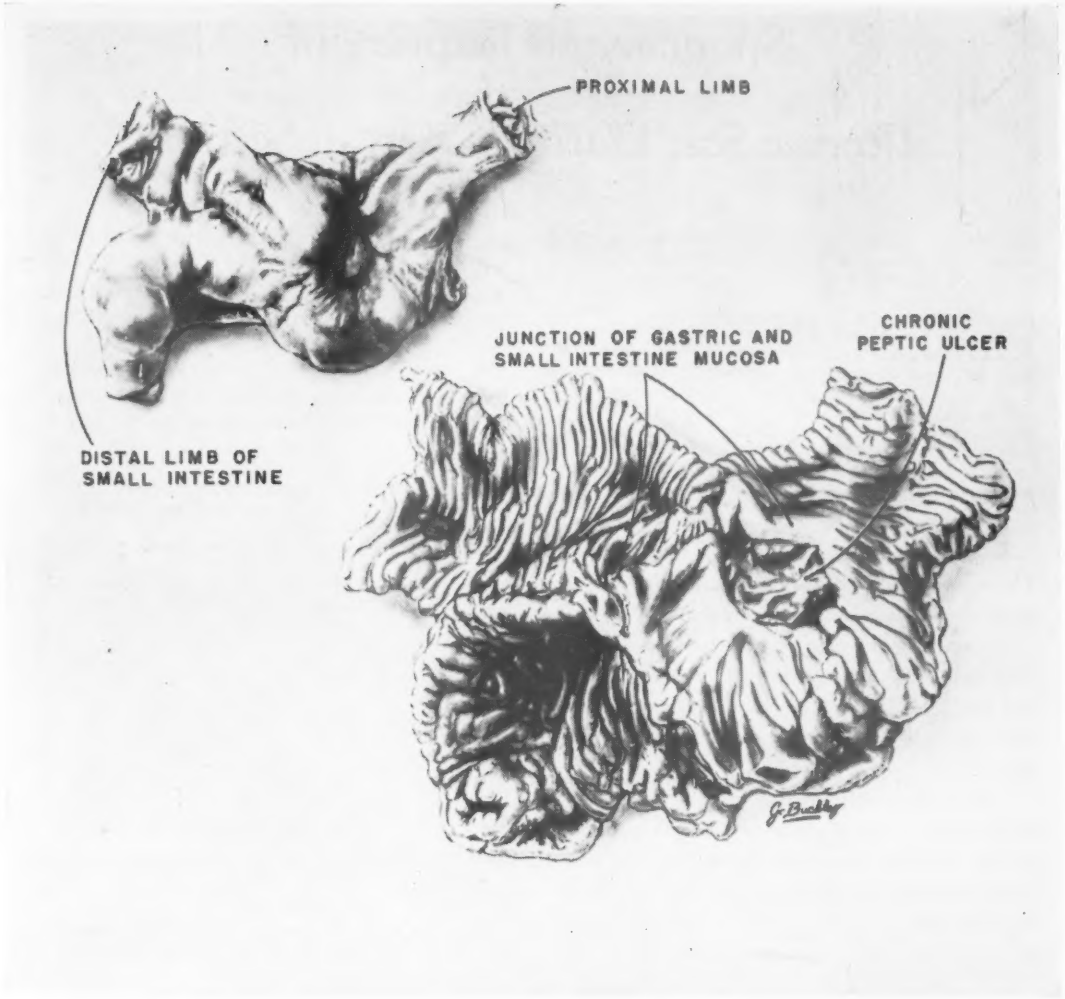
Pathologic Report. The specimen of small intestine measured 14 cm. in length and in its midportion presented a localized saccular dilatation from the outer surface of which projected a diverticulum-like structure. At the opening if the saccular structure was a large ulcer which measured 2.0 by 3.0 cm. and 1.0 cm. in depth. The ulcer encroached on the adjacent normal small intestinal mucosa and apparently resulted in some degree of obstruction.

Microscopic examination revealed the ulcer to be of chronic active peptic nature. Gastric mucosa bordered the ulcer and lined the saccular dilatation. The diverticulum-like structure, which was a continuation of the sac, was lined by small intestinal mucosa. The Meckel's diverticulum contained both gastric and small intestinal mucosa. Final diagnosis was duplication of the small intestine, containing gastric mucosa and chronic active peptic ulcer; Meckel's diverticulum.

Dr. Clift is Surgical Resident, Cincinnati General Hospital, Cincinnati, Ohio.

SUMMARY

A case is reported of duplication of the small intestine, containing gastric mucosa, a chronic active peptic ulcer, and a Meckel's diverticulum in a 2½ year old white male. At 6 months of age, the illness began with melena as the cardinal symptom. The patient was operated on two years later.



References

[1]Donovan, E. J., and Santulli, T. V., Duplications of alimentary tract; report of 6 cases, Ann. Surg. **126:** 289-304, Sept. '47.

[2]Donovan, E. J., Gross intestinal hemorrhage in infants and children, S. Clin. North America **27:** 443-446, April '47.

[3]Edwards, H., Congenital diverticula of intestine, with report of case exhibiting heterotopia, Brit. J. Surg. **17:** 7-21, July '29.

[4]Black, R. A., and Benjamin, E. L., Enterogenous abnormalities; cysts, and diverticula, Am. J. Dis. Child. **51:** 1126-1137, '36.

[5]Grove, E. W., and Porch, L. D., Duplication of terminal ileum; report of case associated with 2 congenital diverticula, South. M. J. **36:** 735-736, Nov. '43.

[6]Ladd, W. E., and Gross, R. E., Surgical treatment of duplications of alimentary tract; enterogenous cysts, enteric cysts, or ileum duplex, Surg., Gynec. & Obst. **70:** 295-307, Feb. (no. 2A) '40.

[7]Ripstein, C. B., Duplication of small intestine, Am. J. Surg. **78:** 847-852, Dec. '49.

[8]Fecher, M. P., Day, S. M., and King, F. G., Ileal duplications, Ann. Surg. **135:** 555-559, April '52.

Spontaneous Rupture of Uterine Scar During Cesarean Section

Emily E. Wright, M.D.

THE RECOGNITION AND MANAGEMENT of placenta previa has received renewed attention and reevaluation in recent years.[1] The occurrence of central placenta previa without premonitory symptoms is quite uncommon.

The rare occurrence of placenta previa with placenta accreta was reviewed by Kistner, Hertig, and Reid in 1952.[2] At that time only 21 cases had been reported; to this number they added 9 cases of their own.

The object of this paper is to report a case of unsuspected central placenta previa with placenta accreta, and with rupture of the old corporal scar which necessitated cesarean section and complete hysterectomy.

Case Report

Mrs. A. C., aged 21, gravida IV, Para II, was referred to us on August 11, 1954, for her fourth cesarean section. Her estimated date of delivery was September 12, 1954. The past medical history was not abnormal. The past obstetrical history revealed a cesarean section of the classic technique performed in 1949 for cephalopelvic disproportion. Fifteen months later she had a repeat cesarean section of the lower segment technique at approximately 32 weeks of gestation when labor started prematurely. This infant died when two days of age. In 1952 she had a repeat lower segment cesarean section at term. The present pregnancy had been uneventful until she started having irregular premature contractions on August 23, 1954. She was admitted to the hospital and immediately scheduled for cesarean section.

At laparotomy there were many adhesions over the thin, scarred, lower uterine segment. The corporal scar was very thin, and covered only by the peritoneal reflection. Upon incising the lower segment, the placenta was encountered and a 3 pound 14 ounce male infant was delivered by breech extraction through the incised upper border of the placenta. The placenta occupied the entire lower segment and completely covered the internal os. Following this it was noticed that a rent 7.0 cm. in length located at the site of the previously described corporal scar was present. There was no definite cleavage plane between the lower segment and placenta. After some difficulty, the placenta was removed and it was found that placental tissue remained attached in this area, which bled profusely. Because of this hemorrhage and the corporal rent, total hysterectomy was done.

Microscopic sections of the lower uterine segment disclosed much decidual tissue with large venous spaces and smaller collections of chorionic tissue. Other sections in the area of the corporal rent showed atrophy and fibrous replacement of the myometrial tissue.

Dr. Wright was Chief Resident in Obstetrics and Gynecology, Bethesda Hospital, Cincinnati, Ohio, and is now in private practice.

Summary

An unusual case is reported of central placenta previa and placenta accreta, with spontaneous rupture of a previous corporal scar, found at the fourth repeat section and necessitating cesarean section and complete hysterectomy.

References

[1] Beilly, J. S., Greenberg, M. W., Aaron, J. B., and Peck, S. J., Placenta previa: eleven-year review, Am. J. Obst. 63: 414-419, Feb. '52.

[2] Kistner, R. W., Hertig, A. T., and Reid, D. E., Simultaneously occurring placenta previa and placenta accreta, Surg., Gynec. & Obst. 94: 141-151, Feb. '52.

Rectal Bezoars

Miriam I. Smith, M.D.

FOREIGN BODIES in the rectum occur relatively frequently.[1] Rectal bezoars, however, are uncommon. I have found only one such case reported,[2] in which a rectal impaction occurred in a patient after the ingestion of numerous small chicken bones.

In the case to be presented, the bezoar consisted of markedly dessicated fecal material liberally mixed with bits of ingested fingernails.

CASE REPORT

A 6 year old white female came to the x-ray department on January 12, 1952 complaining of uncontrollable diarrhea. The child had been expelled from school because of her difficulty. Detailed questioning of the child and of her mother revealed that she liked school, got along well with the other children, and was unhappy when kept at home. She was one of several small children in this family and had learned at an early age to care for her own needs. The mother confirmed the frequent bowel movements, soiling of undergarments, and urgency of defecation.

A flat film of the abdomen revealed a marked amount of fecal material in the entire colon in spite of the cathartics and enemas given as preliminary preparation for the barium enema examination. There was a large mass of material in the rectum which showed innumerable tiny radiopaque areas. Questioning and observation of the patient confirmed that nail-biting was a fixed habit.

The barium enema was given without difficulty and no abnormalities of the filled colon were seen. During filling, the barium was seen to flow around the mass in the rectum. Evacuation of the barium was very poor and the mass was still seen in the rectum.

The diagnosis of a rectal bezoar was made. A few days later, under anesthesia, the mass was broken up and removed through the rectum. The mother was advised to supervise the child more closely, at least, until normal bowel habit was established. Recovery was immediate, and at the present time the child is doing well and has had no recurrence of her symptoms.

Dr. Smith is Assistant Radiologist, Our Lady of Mercy Hospital, Coldwater; and Bethesda Hospital, Cincinnati, Ohio.

COMMENT

This child did not have a true diarrhea. When she was questioned, it was learned that she had an almost constant urge to defecate. This urge was uncontrollable and in school, when she was not allowed to leave the room, she soiled herself. She always passed very small amounts of a watery substance and had not had a normal bowel movement for several months.

REFERENCES

[1]Macht, S. H., Foreign body (bottle) in rectum, Radiology **42:** 500-501, May '44.

[2]Macht, S. H., and Crabb, G., Chicken bone bezoar in rectum, Medical Radiography and Photography **27:** 88-89, '51.

ESTHER C. MARTING, M.D.
Guest Editor

Dr. Esther Marting, President-Elect of the American Medical Women's Association, is Guest Editor of the Branch Eleven, Southwestern Ohio, issue of the JOURNAL. Dr. Marting is a specialist in radiation therapy in Cincinnati, Ohio. After internship and residency at the Cincinnati General Hospital, she spent two years in special study of tumor diagnosis and therapy in the United States and abroad. She has been director of the Cincinnati General Hospital Tumor Clinic and assistant director of the Chicago Tumor Institute. Dr. Marting is married to Dr. Howard Fabing, neuropsychiatrist, and they have three children.

Included on the Editorial Board for the November JOURNAL are Dr. Elizabeth Gillespie, Dr. Marjorie A. Grad, Dr. Gwendolyn L. Morris, Dr. Margaret Jane Schneider, and Dr. Else Krug Weyman.

Survey of Women Graduates from Cincinnati Medical Colleges

1879 TO 1953

Margaret Jane Schneider, M.D.

CINCINNATI is inevitably associated with the thought of women in medicine, because it was a young woman living in Cincinnati who first had the daring and perseverance to enter the field. Elizabeth Blackwell had to leave her home town to realize her ambition because there was no medical school in Cincinnati at that time that accepted women.

Today the College of Medicine of the University of Cincinnati may well be considered, in its size and scope, a typical American medical school. Through research in alumni files and through the circulation of a questionnaire, we have attempted to find out what has happened to the women who have graduated from medical colleges in Cincinnati and to determine in what measure they have utilized their medical education. It is felt that the results of this study give a representative picture of women in medicine throughout the country.

Graduates included in the study were those from the Medical College of Ohio, Cincinnati College of Medicine and Surgery, Miami Medical College, Women's Medical College, Presbyterian Hospital and Women's Medical College, Laura Memorial Medical College (union of Women's Medical College and Presbyterian Hospital and Women's Medical College), Ohio Miami Medical College of the University of Cincinnati (union of Medical College of Ohio and Miami Medical College—present title—College of Medicine), and the University of Cincinnati.

In the period from 1879, which was the year the first woman was graduated, to 1953, there were 212 women who completed their medical course. Of these, 59 are deceased and are not included in this analysis. Questionnaires were sent to the 153 living graduates and replies were received from 133. The most immediate evidence was that medical women read and answer their mail.

Dr. Schneider, formerly Assistant Professor in Physiology at the University of Cincinnati, is at present in general practice in Cincinnati.

Family Status. Of the 133, 95 have married and 38 have remained single. In the married group, five are widows, seven are divorced, and two of the divorced women have remarried. The survey reveals that 50 of these women married physicians, 6 professors, 6 engineers, and 3 lawyers.

In spite of their busy schedules, 68 of the women doctors have had a total of 157 children, an average of 2.3 children per mother or 1.6 children per married woman doctor.

Education. Regular internships were served by all except two or three of the early graduates. At the present time, 15 women are doing graduate study for periods of one to four years. An additional 67 have done from one to eight years each of graduate study, the average period of study being 2.2 years. Board status is held by 20, an additional 13 are working on their boards.

Practice. Of the 133, 127 have utilized their medical education in some manner or other, and only 6 have never done anything in the field of medicine.

Of the 100 in active practice today, 74 are in private practice, 16 are in research, teaching, health departments, and so forth, and 10 are residents.

Chart I indicates types of the work these women are doing. The women were grouped according to

CHART I. TYPES OF WORK DONE

No.	Practice	Teaching	Research	Public Health
57	Full			
2	Full	Part	Part	
3	Full	Part		
1	Full			Part
2	Full		Part	Part
9	Part			
2	Part	Part		
1	Part	Part	Part	Part
2	Part	Part	Part	
1	Part		Part	
1	Part	Part		Full
1		Full		
1		Part		
1		Part	Part	Part
1		Part		Part
1		Part	Part	
4				Full
10	Residents			
100	Total			

specialties, with the following result: general practice, 38; pediatrics, 18; internal medicine, 13; psychiatry, 11; obstetrics and gynecology, 8; public health, 6; ophthalmology, 5; radiology, 4; industrial medicine, 2; surgery, 2; anesthesiology, 1; dermatology, 1; ear, nose, and throat, 1; pathology, 1; and tuberculosis, 1.

In an effort to determine the effect of marriage on the use of her medical education by women doctors, a breakdown of full- and part-time work, correlated with marital status, was made (Chart II).

CHART II

	Practice	Teaching	Research	Public Health
Married—working full time	45	1	0	0
Single—working full time	29	0	0	0
Married—working part time	15	12	8	5
Single—working part time	1	3	2	1

Nonpracticing. There are 33 graduates who are not in active practice for the following reasons: family responsibility, 16, of these 10 plan to practice in the future; resting, 1, plans to practice in the future; illness, 1; retired, 14, these have practiced an average of 27.5 years; and joined religious order, 1.

Conclusions

This survey indicates that the women graduates have contributed in no small way to the care of the sick, the teaching of those in training, the advancement of research, the work in public health, student health, clinics, and so forth. They have many times over justified their place in the medical field. The number of married women who have reared families, managed homes, and continued their medical work proclaims the well-rounded, efficient, capable woman of today.

Medical Education of Women in Cincinnati

Medical education in Cincinnati began early in the nineteenth century. In 1805, the first medical diploma to be granted west of the Allegheny Mountains was granted to Daniel Drake by Dr. William Goforth with whom Drake had worked and studied for four years. Later, Dr. Drake went to Philadelphia to study for a year and received a second diploma.

Shortly after his return, he accepted an invitation to teach Materia Medica at Transylvania University, Lexington, Kentucky, the first medical school founded west of the Alleghenies and outside of the original 13 states. In 1818, Drake returned to Cincinnati and began to formulate plans for the founding, in 1819, of the Medical College of Ohio, the second medical college west of the Alleghenies.

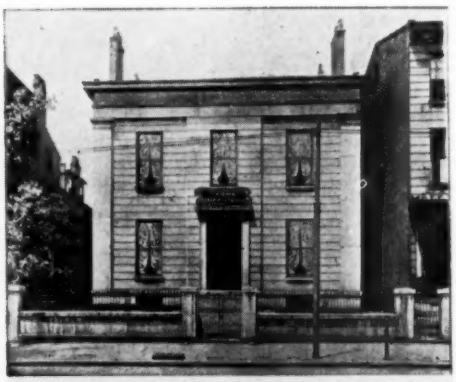
The growth of this infant college was far from peaceful and steady. There was wrangling among the faculty. Drake was on and off the staff a number of times. Other colleges sprang up and they too had their difficulties because of quarrelling among the faculties. Drake tried to establish a rival medical college which survived only four years. Fortunately, Drake realized the necessity of bedside instruction for the medical students and succeeded in founding a hospital where the students of the Medical College of Ohio received such instruction.

By 1850, there were a number of private medical schools, none of which were doing very well. A group of the more progressive, liberal minded physicians realized that medical education was not good divided among so many small schools and was hampered by incessant wrangling among the staffs. In 1851, this group founded the Cincinnati College of Medicine and Surgery. They managed to put aside their personal differences and co-operated to allow this college to survive with a strong and able faculty. In 1876, this college merged with the Miami Medical College and became the Medical Department of the University of Cincinnati. However, it did not relinquish its charter to the University until 20 years later. The numerous other private colleges expired, one by one, so that today there exists only one, known as the College of Medicine of the University of Cincinnati.

It was the old Cincinnati College of Medicine and Surgery (see cut) which first admitted women students in 1883. Seven women were graduated in the first three years. In 1886, a separate department for women was created under the name of the Woman's Medical College of Cincinnati and continued as such until 1890. In this year, a charter was obtained and it was established as a separate institution.

CINCINNATI COLLEGE OF MEDICINE AND SURGERY (1872-1883)

In 1895, the Laura Memorial College (see cut) was founded by Mr. Alexander McDonald as a memorial to his only daughter. The Woman's Medical College of Ohio was absorbed by the Laura Memorial College in 1895. In this college, too, there developed discord among the faculty and the school was abandoned in 1903. Its students were transferred to the Miami Medical College. In the eight years of its existence, about 150 women were graduated. Dr. Frances Rouch was its first graduate. As previously noted, the Miami Medical College merged with the Cincinnati College of Medicine and Surgery in 1876, to form the Medical Department of the University of Cincinnati. The education of women in medicine in Cincinnati has been continuous since 1883.



WOMANS' MEDICAL COLLEGE OF THE PRESBYTERIAN HOSPITAL

Today, there are a number of graduates of the Laura Memorial College still living. It is from their letters that this material has been compiled. Unfortunately, there is not space enough to publish their entire letters, so only parts are here given.

One of the fascinating descriptions of the Laura Memorial Medical College is as follows:

"On an afternoon of a beautifully bright day in September, 1898, I had my first glimpse of this, my Alma Mater. As I went up the front walk with my father, I saw what appeared to my unsophisticated eyes a mansion, being a beautiful three story building of white Bedford stone, with wide, deep portals ornately carved, yet of dignified beauty.

"The very wealthy and influential Alexander McDonald, whose daughter, Laura McDonald Stallo, had died in childbirth while abroad, had built and established this college with the desire to honor his daughter's name and to provide a source of knowledge and skill which might keep other women from early, and possibly preventable, death.

"He used his great wealth and resources to establish and maintain this women's college, the only women's medical college west of Philadelphia at that time. He was successful in securing the very best for his faculty, choosing those of high standing and great ability from the Ohio and the Miami Colleges, and the City Hospital; they continued on these staffs, rotating with that of the L.M.W.M.C.

"The equipment and facilities were of the highest quality, and were very much envied by the new students of other colleges.

"Upon ringing the bell, we waited a few minutes when the door was swung open and we were greeted by the hospitable welcome of dear old Adam, the custodian, who ushered us into a beautiful reception room and hastened to notify the dean, Dr. John M. Withrow, who promptly made his appearance. After greeting me cordially, signing me up as a matriculant, and welcoming me as a student, taking all fear of the great man away by his fatherly and professional manner, he escorted us to a hall where a class was being held and presented us individually to the class.

"This classroom occupied the full length of the building, facing the street, with a huge picture window, somewhat screened from the public's inquisitive gaze by huge potted palms and flowering oleanders. This was Lecture Room No. 1. Other classes were held in the adjoining Presbyterian Hospital, with which the College was closely connected and affiliated. It contained clinic rooms, laboratories, and dispensatories. The buildings were connected by covered bridges from the upper floors. The Hospital had two additional floors. Adam, and his wife Mary, a buxom, jolly, matron-like woman, whom we

speedily dubbed 'Eve,' lived on the third floor rear of the College building; and having been installed there as caretakers and overseers of the building and students, were very faithful in their positions. About once or twice each week we girls were invited, by sections, up to their rooms for a good home-cooked lunch to which we eagerly looked forward. We roomed at private boarding houses in the immediate vicinity of the College.

"The students came from diverse parts of the United States and from foreign countries—Australia, Central America, and Mexico—and ranged in age from 17 to 30 years.

"My individual schedule for the day was typical of that of the other girls. I would retire about 12 o'clock, after an evening out followed by two hours of intense study. I got up at 4:00 a.m., showered, dressed, and studied again for two hours before breakfast. Then I went to the College where I would meet other girls and we would start for the City Hospital, about 12 blocks away, where the big operations were performed in the amphitheater. This 12 block walk was beneficial to us, although on crisp, wintry mornings with 6 or 8 inches of snow, we would grumble. There would be about 700 or 800 men students assembled with 18 or 20 of us girls. We would be concentrated in a bunch as near the front as possible. We saw wonderful and very skillful operations performed here. After these were over, we sometimes went to other places to see special operations, and on Saturday we were free for the afternoon.

"I look back on my experiences there with a longing for the dear companionship, the most excellent instructions, and devotion to high ideals as exemplified by the teachers."

Most of the L.M. graduates speak of the excellent faculty and the wealth of instruction. The students were serious minded and devoted to their studies. Their high ideals have, undoubtedly, carried on to the present day woman medical student. We present day women doctors owe much to our predecessors who paved the way for us so ably.

The Editorial Committee of Branch Eleven is deeply grateful to the following for their contributions which made this article possible:

Dr. Louise Perry, Asheville, North Carolina
Dr. Florence M. Olmsted, Cincinnati, Ohio
Dr. Frances Hollingshead, Cincinnati, Ohio
Dr. Frances Jessie Iliff, Cincinnati, Ohio
Dr. Emma Templin, Hillsboro, Ohio
Dr. Lydia Poage, Toledo, Ohio
Dr. Bertha Dauch, Cincinnati, Ohio

Still Pioneering

To most of us the word pioneering brings up visions of the early settlers of this country, tracking across a vast wilderness on foot, by horseback or by wagon, to claim this new land for their own and to acquire freedom of speech, thought, and religion.

The area included in Branch Eleven was a part of the Northwest territory. To those living on the east coast, Ohio seems to be in the Midwest which is still regarded by some as relatively unsettled territory. But those of us who live here feel very much embroiled in civilization with its daily busy routines, plush conveniences, and lack of intrigue and adventure with which the lives of all pioneers were presumed to be blessed.

In recent communications with women physicians from this area, there are three, at least, who have managed to fill their lives with pioneering luster and flavor. We present to you the following abstracts from their letters as proof. Obviously, there is still much pioneering to be done!

From Dr. Barbara Hewell, who recently left her position as pediatric tuberculosis co-ordinator of Cincinnati and Hamilton County to go to Cairo, Egypt, to serve on the Egyptian-American Joint Committee for Public Health:

"Dear Friends, I have been here three weeks today. I had a most deluxe trip over via Scandinavian Air Lines, stopping in Glasgow and Copenhagen. The plane was built for long-legged Scandinavians: five feet between seats and the berths big enough for three. They served the most wonderful food and drinks constantly. I enjoyed the superb milk and cream as one dares not drink it here. Copenhagen is the cleanest city I ever saw, (and Cairo the dirtiest!). I had two nights and a day there and saw the castles along the north coast and visited Tivoli, a huge amusement park. Two Danish doctors who have been in the States recently showed me the city and countryside with its rolling farmland, beautiful barns, much water, lilacs, apple trees, and tulips in bloom. I hope to see more of it sometime.

"The trip down to Cairo took 15 hours, and as we had a beautiful clear day, one could make out many castles along the Rhine, which we followed for many miles. The trip over the German Alps was very spectacular. There were brief stopovers in Frankfort, Vienna, and Istanbul; only in Vienna

did they lock us in a special room of the airport with armed Commies much in evidence. I did not try to peep out. Arrived here at 2:30 a.m. and was met by Mr. Shannon from our office and Abah who drives one of the embassy cars. They hustled me through customs with no difficulty. For the first 10 days, I stayed at the Semiramis Hotel, the 'Riviera of Egypt,' on the banks of the Nile and it is very atmospheric. One of ex-King Farouk's yachts is used as a palatial annex; one can sit on the decks and sip cool drinks. The river is very pretty at this spot and is decked with many sailboats; sailing is quite a sport here. At present I'm living at a pension until such time as I find an apartment and my furniture arrives. It is more interesting than the hotel as one meets so many varied types and races. There are students of Arabic, archeology, and history; missionaries, and diplomats from everywhere.

"Cairo is an interesting place of beautiful buildings and parks and many flowers; at the same time, unbelievable poverty, filth, and flies, flies, flies. As it never rains, everything looks dusty and weathered. The sun is bright and the sky a clear vivid blue and, at least at this time of year, with few clouds except in the early morning. Sunsets are brilliant with unusual effects and color changes which I hope to catch in my pictures. There is an unusual green and lavender color that I have not observed previously. The streets are overflowing with picturesque people and vehicles of all kinds. There are many automobiles of every type, and people drive like mad constantly blowing horns; many donkeys and carts much overloaded with people and/or merchandise; homemade crates of vegetables, fruits, grain, grasses, pottery; camels loaded with big baskets; lots of bicycles; flocks of sheep going to market; and some really handsome horses, ridden by soldiers and police dressed in white. The people are varied as to race and costume; (you see) flowing loose clothes, veiled women, European clothes, and mixtures of all. Some of the people are very handsome and have much grace of movement and carriage. In the rural areas it is even more picturesque, but the mud villages where the farmers or fellaheen live are unbelievably crowded and filthy.

"As to work, I am busy meeting many people in the Egyptian Ministries of Health, Education, Welfare, and the medical school faculty, and so forth. There is much protocol about meeting the chiefs first, presenting cards, having a cup of coffee or tea at every visit. Being a woman in the Moslem world, I have tried to be very dignified and most respectful. The names are very strange and at this point I can't remember any of them. Arabic is pleasant to listen to, but difficult, and people and streets have at least three or four names, taking about half a page to write. I have visited Caluib Training Center and observed the maternal and child health program there. This is a demonstration by World Health and Egyptian government agencies trying to carry out economic, agricultural, educational, health, and welfare activities for a rural area. I also have visited what will be my special interest, the new health center at Shrubamont, close to the big pyramids of Giza. We have a fine view of them from the center. At this center we hope to develop a local health department. Americans usually will train Egyptian associates. Mine has not been chosen as yet. I also took a quick look at our village. A foreigner is a curiosity and after one enters a house with an interpreter, so many villagers gather that one can hardly get out. I would have loved to know just what they said, for they talked all the time. According to the interpreter: about your hair, clothes, whether you are pretty or ugly, and so forth. My interpreter has a wonderful sense of humor, so I'm not sure.

"We have nice offices and hours are from 8:00 to 2:00 daily. I find that I fit in nicely with the siesta hour which lasts from 2:00 to 4:30. We have the main meal at 2:00 and dinner at 8:00. After 9:00, social life begins, and you go sit on someone's balcony for a few hours. Not bad! The weather so far has been good, though they tell me that with the Nile flood, which occurs in August and September, there will be humidity and discomfort. With the dry heat and an almost constant breeze, I have been very comfortable. The nights cool off delightfully and I've slept under a light blanket before morning. The cool evenings and breezes as well as the bright sun remind me of Hawaii.

"I am also reminded of Hawaii by the friendliness and social life. There are so many parties! A new arrival receives two or three written invitations daily to cocktail parties from 7:00 to 9:00, given by Americans or Egyptians working with us. Some are people who have mutual friends and others, the majority, are just Americans who wish to welcome a newcomer. These are typical American parties with much to eat and drink. Also everybody has servants and one is invited often to lunch as this is usually dinner in Egypt and everybody takes off until 4:30. I have joined the Gezira Sporting Club which has a fine swimming pool and golf course. It is the social center for Americans, what British are left, and the educated Egyptians. Although one misses greatly all those old friends in the early days of a new environment, no one leaves you time to be lonesome.

"These are first impressions and surely lack literary merit and are most inadequate, but perhaps they give you an idea of my interests and activities.

If incoherent, blame it on the fact that I am studying both Arabic and French conversationally at the Berlitz School, with the immediate result that I can't spell English and I often come out with something in German which I speak least well, or even Latin. If I don't watch out I shall soon be sttutterring. (See what I mean?)"

* * *

From Dr. Louise DuBreel, who graduated from the University of Cincinnati College of Medicine, joined the Society of Catholic Medical Missionaries, and became Sister Mary Marcella, comes this story:

"I entered the convent in July 1945, finished my noviceship in February 1948, and arrived in India in April. Had three busy years in Bihar and the V.P. province and then went back for a year of surgical residency in Hamilton. Then I was sent here in October 1951. What do I do? Well—I limit my practice to the human body, I guess. I'm what Dr. Wagner calls a 'general specialist.' With the aid of a nurse-sister (American) or two at times, and three Bengali sister-nurses and some aides we, or I, practice surgery, obstetrics, gynecology, medicine (chiefly parasitology), and pediatrics, with a little urology and orthopedics thrown in. I'm also chief lab technician and in my 'spare' time I repair things. We have some very interesting cases, and amazingly good results, considering the dearth of transfusions, oxygen, x-ray, and biochemistry. I use my nose, eyes, and ears; but chiefly the prayers of all the patients, their relatives, the native sisters, and my relatives. I've lost my faith in hemoglobin. Or should I say we should revise the books? I do pump iron into our ladies like mad, and vitamins, since beriberi and scurvy are prevalent. Dr. Ames predicted they'd all die of vitamin C poisoning. But I think that's why the old wounds heal so beautifully. Anyway, with at least four or five diseases, the differential diagnosis becomes nicely complex, the treatment sometimes a series of minor or major crises, and I'm a rag when I've eased them over some. However, by comparison, life at home is dull indeed. It would be nice if someone would write a tropical medicine text that would reverse the usual three lines of symptomatology, course, and treatment, and 100 pages devoted to describing the worm. Maybe I'll do that when my arches give out."

* * *

Dr. Myrta M. Adams, who practices general medicine in Newtown, Ohio, a small village on the outskirts of Cincinnati, has a small sideline to her busy professional life. She runs an extensive apple orchard; participates in all the worth-while efforts of the community; and is one of the faithful, dependable, active members of Branch Eleven. To spend an evening with her listening to the amazing true stories that flow from her facile mind is indeed a rare treat. The following are only samples.

"I graduated from Rush Medical School, Chicago, in the 'good old days' when all medical students expected first to become doctors and later, when 'dry behind the ears' and after learning about the whole man, perhaps to specialize. I worked my way through school and was lucky enough to have a scholarship here and there. During my senior year, I had a resident student internship at Cook County Hospital, Chicago, then considered the Holy of Holies. I was accepted for a rotating internship at Cincinnati General Hospital after passing a competitive entrance exam. The interns had an 'eager beaver' attitude; hours of work were rarely considered and clock watching was indulged in only by the rare dilettante. We were there to learn and the responsibility for the treatment of the patients was largely ours, although the attending staff was more than willing to give advice and help. We considered any work that we could do as a privilege and by the time our internships were completed, we felt fairly confident. We had fun too; mostly home-made fun within the confines of the hospital.

"After my internship I married and went off to Liberia, North Africa, where my husband was a teacher in the College of West Africa. I practiced privately there. Most of my work had to be done through interpreters and much of my income was in barter such as rice, palm oil, chickens, bananas, baby monkeys, and one baby baboon. On several occasions, children were offered.

"Since walking by a white 'Ma' was considered undignified, transportation was entirely by hammock, even in the local town. So, I hammocked about town and far out into the jungle. My first important patient was a chief's daughter with tuberculosis of the spine. Because of my orthopedic training, the outcome eventually was good.

"One day, shortly after I had administered an anesthetic to a tall native boy from a nearby tribe, I found his pallet empty. He was nowhere to be found. Shortly before sundown, he returned. He had to run home and tell his folks about the white 'Ma' who could 'make you die and come alive again.'

"On another day, one of the white missionaries was brought in to have her first delivery at the age of 42. Seven month premature twins, each weighing 2½ pounds, arrived. Incubators were improvised from baskets and bottles of hot water. A runner was sent to bring a graduate nurse from a distant

Lutheran mission. Luckily, there were several full-breasted native mothers and every morning I ran the milk route so that the infants had all the breast milk that they could take. They thrived and are now adults, living and well.

"I could write many volumes about native medicines and treatment of the sick and injured, most of which were bad and a few good. To treat a fractured femur, the patient was put in a loft in a hut with a stone used for traction. A chicken, with its thigh fractured, was put in with the man and when the chicken recovered, the man was also presumed to have recovered.

"The officials had much trouble with the Leopard Society whose mission it was to obtain hearts, teeth, and other essentials for the witch doctor's brews by waylaying unwary night travelers. My washman had some teeth pulled by me and the next day be brought them back to me to put in my medicine.

"After our two sons arrived, we thought it best to return to the United States since white children do not thrive too well that close to the equator (10° North). I began to practice in a hilly, mining, oil, and farming community. There were no hard-surfaced roads and I was the first M.D. who did not keep horses. When roads and lanes became impassable, I required the folks to fetch me with their own horses. My territory covered a radius of 30 miles. We had the proverbial party telephone lines which formed an effective broadcasting service. I would notify the telephone operator of my whereabouts and she would call ahead and alert the different localities that I would arrive at such and such a time and would not be back for so many days. Folks would flag me down or come to the village store and leave requests for home calls there. At times of rains or epidemics, I had a driver. My car was a Star which could outpull the Ford. Our usual equipment included a block and tackle, axe, posts, extra chains, and food. When ruts became established for the winter, no steering was necessary because the car couldn't get out of them even if you wished it. The big problem was to remove other bogged down cars from the road.

"I had one customer, Tommy Cook, whom the stork visited annually. Every winter, I would be awakened by Tommy who always brought me a riding horse for the long tortuous trek through the hills to his house. Wildcats and other animals serenaded us along the way. Mrs. Cook always had things ready. The hatchet was under the bed to hold down after-pains. I suggested that an axe might do better but the hatchet continued to appear for each event. My pay was always a fat hog which another large family would process and bring to me to help on their bill. Incidentally, my largest living payment was a beautiful heifer which I had my driver lead home. I always had coal, potatoes, corn, and other produce for sale.

"One of my favorite patients was a very well read, mentally alert, very human old man in his nineties. He broke a hip one day and refused to go on the train to the nearest hospital, 55 miles away. (Hospital cases were picked up anywhere enroute by the local railroad.) So, after sandbagging, he finally was able to get into a wheel chair. This became tiresome to him and eventually he began to distribute his holdings. He called me in one day and said that he had decided to go now. He would go to bed and never eat or drink again. He did not want me to let him suffer, but just to stand by. No amount of pleading could change his mind and in the course of time he went.

"Prenatal calls were unheard of. The folks just came after you. On one such hurry call to a very large old home of many rooms I arrived to find a great moving of furniture going on. The stork couldn't wait. The baby arrived on a feather tick on the floor. When the mother was finally settled in bed by the fireplace, I wished to check the baby. We couldn't find him. All of us were running through the house hunting that infant! He wouldn't make any noise. Finally, after several frantic moments, we found him behind a bedspring that someone had leaned against the wall in front of him, when he had been deposited on the floor.

"My last 25 years have been spent in another country town. Roads are improved and horses have never been necessary but the challenges of a country practice have ever been present. Today has brought the following, for instance: 1) the man who insists that his flu is caused by the tetanus shot he got last winter; 2) the patient who delivered an hydatid mole some time ago, whose second Friedman since is still negative, but for whom I still give a guarded prognosis; 3) the woman who slipped in her garden and can't understand how a fractured vertebra gives her abdominal distention; 4) a new diabetic patient; 5) two industrial cases from the C & O railroad gang; 6) a Colles' fracture in a minor child whose parents are both away at work."

Obviously, pioneering is not a thing of the past!

American Medical Women's Association

PRESIDENT'S MESSAGE

As we approach the end of the year, all of us have the desire to look over the past twelve months. Have we kept some of the New Year's resolutions we made or did we forget them at the end of the first week?

In the same manner, we as an Association should weigh the happenings of the year. Have we accomplished the work we had undertaken collectively, or are we just moving along a plateau? Unless we are willing to assess our results honestly, we cannot see whether we have made any progress. Balancing the books is an invaluable exercise; it can be humbling or gratifying, and frequently is both.

In looking over the accomplishments of the Association, I can truly say that we have made progress; not only in material ways, but also in the work we planned. So it is with renewed faith in our future that I say to each one of you: A Merry Christmas and a very Happy New Year!

HIGH LIGHTS OF 1954 MID-YEAR BOARD MEETING

Acknowledged with Gratitude: Gift of $100 for the purchase of office furniture from donor who wishes to remain anonymous.

Medical Women of the Year: Nineteen Branches each selected a Medical Woman of the Year.

International Dinner: The Saturday evening session was devoted to reports on the MWIA by Dr. Ada Chree Reid, immediate Past-President; a review of scientific papers presented at the MWIA Congress at Gardone, Italy, in September, by Dr. Katharine Wright; showing of kodachromes loaned by Dr. Rita Finkler, Dr. Alma D. Morani, Dr. Ada Chree Reid, Dr. Edith Petrie Brown, and Dr. Camille Mermod. A special feature of this meeting will be reported in the February Journal.

Junior Membership: The Director of Junior Membership conferred with women medical students from the Georgia and Emory Schools of Medicine on the possibility of Junior Branches.

Women Medical Students: Students from Emory and Georgia Schools of Medicine attended the special functions.

Scholarship Loans: Seven loans were granted and eight loans repaid in full during 1954. A policy will be proposed at the 1955 Annual Meeting relative to future uses of the Scholarship Loan Funds.

Publications Committee: Dr. Elizabeth McGrew of Chicago was named to succeed Dr. Beulah Cushman of Chicago, who had resigned.

AMA News Release: The November 5, 1954, AMA news release sent to all newspapers carried a page and a half item on the 1954 AMWA Scholastic Award winners.

Constitution and By-Laws Committee: It was recommended that this Committee be made a permanent Standing Committee composed of a rotating membership. A number of proposed changes in the Constitution and By-Laws were proposed (to be published in the April Journal). A special committee will be appointed for this purpose.

Association Program: Industrial Medicine was chosen as the program theme for 1955.

Branch Project Continued: Each Branch will select a Medical Woman of the Year for 1955.

Pamphlets: Consideration was given to the possibility of publishing informative and statistical pamphlets relating to Medicine, A Career for Women, and the number of women who use their medical training professionally.

1955 Mid-Year Meeting: An invitation was accepted from Branch Eleven, Southwestern Ohio, to hold the 1955 Mid-Year Board Meeting in Cincinnati in November.

Appreciation: Resolutions of appreciation were extended to the members of Branch Twenty-Nine, Atlanta, Georgia, for their gracious and efficient hospitality; and to the Dinkler Plaza Hotel staff for their co-operation in handling the meeting.

Medical Women of the Year

Dr. Augusta Webster, was chosen as the 1954 Medical Woman of the Year by Branch Two, Chicago, for her outstanding contribution professionally.

"She has been a teacher in obstetrics and gynecology for a number of years at Northwestern Medical College.

"For the past two years she has been chairman of the Department of Obstetrics at the Cook County Hospital, the world's largest medical center. Dr. Webster is the first woman physician, in the Chicago area, to hold the position, and one of the two first women to be elected to membership in the Chicago Gynecological Society."

Dr. Ellen C. Potter (M.D., F.A.C.P., L.L.D. Rutgers University, F.A.P.H.A.) was selected by Branch Four, New Jersey as their 1954 Medical Woman of the Year.

She graduated from Woman's Medical College in 1903, and practiced medicine in Philadelphia from 1905 to 1920.

She is noted for her research and education connections. Among other positions of high honor, she served as acting president of the Woman's Medical College for two years.

In public health, she was Medical Inspector of public schools in Philadelphia, and chief, Division of Child Health, Department of Health of Pennsylvania. As the organizer of the division, she developed 300 child health units. She served also as director, Bureau of Children, Department of Welfare of Pennsylvania.

She was the first woman to hold a position as cabinet officer in a state cabinet, as Secretary of Welfare, under Governor Pinchot of Pennsylvania. She has served numerous scientific and welfare groups in official capacities. The AMWA has been honored to have her as a President.

When accepting her Citation at the Mid-Year Board Meeting, Dr. Potter said her chief interest of the moment was the "retardation of advancing age and working to make the latter years happier and more useful." Dr. Potter is 82 years of age.

Dr. Esther Pohl Lovejoy, of the city of New York, who has remained a "Westerner" through interest and activities in the State of Oregon, was chosen by Branch Five of Portland as their Medical Woman of the Year, because "she has given very large and generous scholarships to the University of Oregon Medical School; she has practiced excellent medicine in Portland; and has done outstanding work in the Near East for the American Women's Hospitals, to which she has devoted many years of her life, and has written numerous books on the subject."

Dr. Delia A. Lynch was named by Branch Six, Omaha, Nebraska for her long years of regular attendance at the Branch Six Meetings, and her frequent trips to national meetings.

Dr. Lynch is registered in Arkansas, Arizona, California, Nebraska, Wisconsin, and Texas. She has practiced orthopedics and is interested in work with crippled children. Her non-professional interests are pottery, poetry, and aiding the North American Indians.

Dr. Emma S. Moss was honored by Branch Eight New Orleans, Louisiana, as Medical Woman of the Year.

"There are several local women who have been engaged in endeavors 'above and beyond the call of duty,' but we feel that Dr. Emma Moss, a local pathologist, has been the one to achieve national recognition of her ability this year. Dr. Moss, who has for many years been director of the laboratories at our Charity Hospital, one of the largest in the South, a tribute to both her medical and executive ability, has this year been installed as president of the American Association of Clinical Pathologists. Dr. Moss is the first woman to achieve this distinction, and is the third Southerner ever to be so honored. In addition to her medical and executive duties at the hospital, Dr. Moss has also written numerous scientific articles and has instituted and maintained a highly regarded training program at the Hospital for Medical Technologists."

Dr. Myrta M. Adams was chosen by Branch Eleven, Southwestern Ohio, as the Medical Woman of the Year, because she has proven herself to be a most capable, successful, and ethical physician.

"Ever since her graduation, Dr. Adams has been engaged in general practice, largely rural, either in North Africa or Newton, a small community near Cincinnati. She not only carries on a medical type of practice but does obstetrics, reduces and cares for simple fractures, performs tonsillectomies, does minor surgery in her office, and has a fairly large

practice in industrial medicine. At one time, especially in her early career in Africa, she did tooth extractions.

"In addition to all her practice she finds time to be active in business and local affairs and to enjoy her grandchildren."

Dr. Pauline Pegg Rossel, was named 1954 Medical Woman of the Year by Branch Twelve, Columbus, Ohio, because of her "outstanding efforts in establishing a school for retarded children, who are excluded from public school; and established a colony to help trained retardates make the transition from the state training school to living in the community where they are self supporting."

Dr. Rossel is active in the Ohio National Association for Retarded Children; Citizen's Council for Juvenile Activities, American Association of Mental Deficiency, Council of Social Agencies, Council for Retarded Children, and serves as physician for the juvenile court.

Dr. Anita Figueredo, was selected by Branch Thirteen, San Diego, California, for her outstanding services to the community. Dr. Figueredo, an oncologist, is most active in the fields of cancer detection and prevention. She is a board member of the American Cancer Society and of the California Cancer Society.

"Dr. Anita, in addition to a full surgical schedule at Scripps Memorial Hospital in La Jolla, and to long afternoon office hours, has devotedly given of herself to lecturing to lay groups on cancer detection."

In private life Dr. Figueredo is the wife of Dr. William Doyle, a pediatrician. They are the proud parents of seven children—five boys and two girls. It has been said that, "pregnancies, even in their last hours, never for a moment stopped Dr. Anita from performing a scheduled operation or giving a talk on her favorite topic of cancer prevention."

Dr. Figueredo and Dr. Doyle moved to La Jolla in 1947 where "they both were soon appreciated by the community for their way of life and for their excellence in their chosen fields."

Dr. Connie M. Guion, "whose distinguished career as practitioner and teacher of medicine has strengthened the position of all women who seek to enter this field," was named the Medical Woman of the Year by Branch Fourteen, New York, New York.

Dr. Guion's hobbies are philately and fishing, and her avocation "advancement of the educational opportunities for women, and especially for women in medicine."

Dr. Guion has been the recipient of many honors and awards, including the Elizabeth Blackwell Citation, "in recognition of her distinguished achievement in Internal Medicine."

Dr. Jessie Wright was chosen by Branch Sixteen, Pittsburgh, Pennsylvania, as Medical Woman of the Year because she "has continued to do outstanding work in the care of patients afflicted with poliomyelitis as well as other physically handicapped individuals."

Dr. Anna Young (Beard), because of her outstanding work in pathology and because she has been an inspiration to many struggling medical students and women doctors, was selected by Branch Fifteen, Cleveland, Ohio as its Medical Woman of the Year. Dr. Young has been very active in the field of endocrinological research in pathology. She is a very fine lecturer in detailed pathology, and is the wife of Dr. Edmund E. Beard, endocrinologist.

Dr. Mary T. Greene, the Medical Woman of the Year of Branch Eighteen, New York State, was chosen because of "her outstanding devotion to her patients, keen interest in civic affairs, and for her thirty-seven consecutive years of chairmanship of the medical education committee of the Woman's Medical Society of New York State."

Dr. Greene is the only woman doctor in Wyoming County, New York, and a past president of the Wyoming County Medical Society.

She is the co-founder of the Riverside Hospital, opened in Buffalo in 1893, and now known as the Lafayette General Hospital.

Dr. Elizabeth Mason-Hohl, was chosen by Branch Twenty-Three, Los Angeles, California, for "her outstanding interest and constant active participation in medical service organizations and her untiring efforts to further women in medicine."

Dr. Hohl was the co-founder and chief of staff of the Cancer Prevention Society and Clinic since 1944; the co-founder and president of the Los Angeles County Physicians Aid Association; Career Women; and past president of the Pan American Medical Women's Alliance. She is also a Past-President of the AMWA.

Dr. Esther M. Greisheimer, was selected by Branch Twenty-Five, Philadelphia, Pennsylvania, as "The woman physician who has made the most outstanding contribution to her community professionally and civically: "For outstanding scientific achievements; her excellent teaching; her work with women medical students; her

active interest in Branch Twenty-Five; and for her constructive outside interests, such as her service as Deacon of the First Presbyterian Church, in Germantown, Philadelphia."

Dr. Greisheimer was unable to attend the Mid-Year Meeting to receive her citation in person owing to the pressure of work in connection with the publishing of a completely revised seventh edition of her textbook, "Physiology and Anatomy," widely used by colleges and schools of nursing.

Dr. Della Drips, is the Medical Woman of the Year for Branch Twenty-Six, Minnesota. "Her pioneer investigations in the field of hormones; her study of gynecologic endocrinology in Berlin; the development of the first laboratory in this field at the Mayo Clinic; her authoritative knowledge of the subject; and her readiness and ability to teach has resulted in many warm friends among those who have been privileged to know and work with her."

Dr. Drips retired from the active practice of medicine and her specialty of gynecology at the Mayo Clinic in 1949.

Dr. Harriet E. Gillette, became the choice of Branch Twenty-Nine, Atlanta, Georgia, because of "her insight and farsighted approach to the needs of the cerebral palsied and the aged. Her medical clinic instruction and improvement of rehabilitation facilities throughout Georgia are leading to improved therapy and relief of suffering in this group."

Dr. Gillette is active in the DeKalb County Chapter of the Muscular Dystrophy Association and the Georgia Chapter of the National Multiple Sclerosis Society; in the Southeastern section of American Congress of Physical Medicine and Rehabilitation which she serves as secretary; and she is vice-chairman of the physical medicine section, Southern Medical Association.

She is the cerebral palsy consultant for the National Society for Crippled Children and Adults; is the Regional Consultant NRC committee on upper extremity prosthetics, and is physical medicine consultant for the State of Georgia, Department of Education Vocational Rehabilitation; also she is with the crippled children's division of the Georgia State Department of Health, The Florida Crippled Children's Society, and Southeastern Area physical medicine for Veteran's Administration.

Dr. Iva C. Youmans, because of her "charm and ability which has endeared her to her colleagues and inspired the many young women now practicing in this area," became the Medical Woman of the Year of Branch Thirty-Three, Florida. Dr. Youmans has practiced pathology, also obstetrics and gynecology. She is a teacher in the Sunday School of the Central Baptist Church in Miami, Florida.

Dr. Eva F. Dodge "is an incentive to both the professional women and the lay women of Arkansas because of her tremendous interest in community affairs and the personal attention given to her private cases. She has done an outstanding service." For these reasons, Branch Thirty-Four, Arkansas, chose Dr. Dodge as its Medical Woman of the Year.

Dr. Marian W. Ropes, was chosen by Branch Thirty-Nine, Boston, Massachusetts, for "her outstanding work in arthritis especially in synovial fluid."

Dr. Ropes serves on the medical and scientific advisory committee of the National Arthritis and Rheumatism Foundation. She is president of the New England Rheumatism Association and is the second vice-president of the American Rheumatism Association.

ALBUM OF WOMEN IN MEDICINE

Branch Eleven, Southwestern Ohio, of the AMWA wishes to honor in this, its first edition of the Journal, two outstanding women physicians who have done much not only for the Association and Branch Eleven, but also for all women in medicine. Both have served the Association as President; both have devoted their lives to the practice of medicine; both have served as invaluable examples to the women following in their footsteps; and both have accomplished a prodigious amount of good by their intelligent efforts and tireless devotion. Both graduated in the same class from the University of Cincinnati, College of Medicine, and have remained lifelong friends. Both practiced obstetrics and gynecology, one devoting her efforts to the surgical aspect of the specialty and the other to the obstetric aspect. Both have given freely of their time and energies to the AMWA, attending meetings, serving on committees, and contributing much to the development of the Association with their wisdom and sage judgment.

Their biographies, written by one for the other, are most proudly presented:

PAST PRESIDENTS OF AMWA

MABEL E. GARDNER, M.D.

THE ESTEEM in which Dr. Mabel E. Gardner is held was demonstrated tangibly in June of this year at the Annual Meeting of the American Medical Women's Association in San Francisco when she was awarded the Elizabeth Blackwell Medal, thereby proclaiming her the outstanding woman physician of the year, principally for her services to the Association in establishing Junior Branches in medical schools.

Two weeks before receiving this honor, she had received the Distinguished Alumni Award from her alma mater, Otterbein College. This award was in recognition of forty years of outstanding service to humanity through the ministry of healing. According to Mr. Vance Cribbs, president of the Otterbein board of trustees, the Otterbein award is not made annually, but only when a graduate's exceptional service merits such recognition.

Dr. Gardner is truly a product of Southwestern Ohio. Her family was established there. She received her undergraduate preparatory college training at Otterbein College and her medical degree at the University of Cincinnati Medical School. However, she went to the Mary Thompson Hospital in Chicago for her internship, and later did her postgraduate work in surgery in Chicago. There she came under the inspiring leadership of Dr. Bertha Van Hoosen and was trained by her.

Returning to Cincinnati thoroughly grounded in obstetrics and gynecologic surgery, Dr. Gardner was appointed to the faculty of the Medical School of the University of Cincinnati and served as assistant clinical instructor from 1926 to 1941. In 1936, she was appointed chief of the obstetric staff and instructor of nurses at the Middletown Hospital. She held this position until 1950.

In 1926, Dr. Gardner became a Fellow of the American College of Surgeons. She has been eminently successful in her professional work. During the years she has filled such important posts as secretary and president of the Butler County Medical Association, president of the Middletown Hospital staff, and chief of the obstetric staff of Middletown Hospital. She has been a member of the Middletown Board of Health for thirty-five years.

True to the traditions of her family, Dr. Gardner is a civic minded individual. She participates actively in all civic betterment projects in Middletown. Especially is she interested in such projects as improving national health standards, the cancer crusade, tuberculosis prevention, and girls' clubs. She has been a member of the board of trustees of Otterbein College for twenty years. She served, too, on the alumnae board of the University of Cincinnati Medical School and for one year was its president.

She has been associated closely with the women physicians in Cincinnati, and is an active member of the Southwestern Ohio Branch of the AMWA. She has been always a zealous worker in the Association and was President in 1947 to 1948. As an individual she is humbly religious and is devoted to all humanity. She is a tireless worker, seeking no vainglory and finding real satisfaction in whatever she does. Highly regarded by her medical associates and dearly beloved by her patients, she goes about her work and gives herself fully to it. Her hobbies are travel and young people. She is an influence for good wherever you find her: a charming acquaintance, a faithful friend.

—CATHARINE MACFARLANE, M.D.
—HELENA T. RATTERMAN, M.D.

HELENA T. RATTERMAN, M.D.

THE CONTRIBUTIONS to medicine of Helena T. Ratterman of Cincinnati, Ohio, are many and varied, and lie chiefly in the field of obstetrics.

Dr. Ratterman grew up in Cincinnati, one of five children of an esteemed and beloved physician. She attended the University of Cincinnati for her undergraduate education and received her M.D. degree from the College of Medicine of that university. She established herself in practice with her father and very early in her career became identified with the Department of Obstetrics of the University of Cincinnati College of Medicine.

She became medical director of the Maternity Society of Cincinnati and soon realized the necessity and the tremendous advantages of seeing the patients before the time of delivery. Because of this, she instituted and developed the prenatal clinical work in all Cincinnati, beginning with one small clinic in the University of Cincinnati College of Medicine and extending to clinics throughout the city. Today, the city is served by 12 free and part pay prenatal clinics with a large staff of well trained physicians and nurses. This serves only as one example of the efficiency and thoroughness with which Dr. Ratterman attacks any job.

She holds the position of assistant professor of clinical obstetrics in the University of Cincinnati Medical School, and serves as consultant to the obstetric service of Cincinnati General Hospital.

Her efforts have not been confined to the field of obstetrics alone. During the influenza epidemic of 1918 to 1919 she was appointed acting assistant surgeon of the Public Health Service and was sent to take charge of emergency work in Delaware. Later she was returned to distressed cities in Ohio. During Cincinnati's repeated flood catastrophies caused by the Ohio River, Dr. Ratterman has always been among the first to volunteer for relief duty.

Dr. Ratterman early associated herself with women of outstanding achievement in medicine and interested herself in the effort to perpetuate opportunities for other women to achieve. Finding that the American Medical Women's Association furnished an opportunity for meeting kindred spirits and was engaged in activities benefiting younger women, she has given much time to this organization. She served as President of the AMWA in 1942 to 1943.

Under her leadership the Cincinnati Medical Women's Club, now known as Branch Eleven of the AMWA, was established. With her keen analytic mind and flair for factual presentation she has served on many important committees of this organization and is recognized as an able financial advisor.

Her personal practice is now devoted more to the field of geriatrics, where she has a faculty for understanding and counseling, a great satisfaction to herself and patients.

Athletics has been her chief hobby. In tennis she played successfully on the University of Cincinnati's intercollegiate team. Then followed a long and successful career, with such high spots as the winning of the Tri State tennis title (Ohio, Indiana, and Kentucky), Ohio State title, and the Hamilton County title. Golf is now her chief love and she plays a game that makes her opponents take notice.

Needless to say, her curiosity remains insatiable and she continues to try to find out "what makes things tick."

—MABEL E. GARDNER, M.D.

(Picture courtesy of Pogue's Studio, Cincinnati, O.)

Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

Editor
EUGENIA GEIB, M.D.
Elizabeth, N.J.

Assistant Editors
MARCELLE BERNARD, M.D.
New York, N.Y.

MARGARET S. TENBRINCK, M.D.
New York, N.Y.

Managing Editor
ELIZABETH C. SMITH
New York, N.Y.

VOLUME 9

January-December 1954

Published Monthly
at 136 4th Ave., N., Nashville, Tennessee
By the American Medical Women's Association

INDEX, VOLUME 9

A

Abdominal epilepsy (Hernandez), 188
Abruptio placentae and placenta previa (Hu), 143
Adenoidectomy, and tonsillectomy, in children, endotracheal anesthesia for (Dollinger), 350
Address, world health day (Candau), 277
Age, effect in clinical course of cancer (Klopp), 109
Aging, we are (Mason-Hohl), 365
Ahlem, Judith, President's message, 27, 49, 87, 119, 163, 193
Album of women in medicine:
  Tegualda Ponce, M.D. (Brodie), 29
  Ines L. C. de Allende, M.D. (Bernard), 30
  Mary J. Ross, M.D., 52
  Ruth A. Parmelee, M.D. (Bernard), 53
  Amy Garrison Kimball, M.D. (Martin), 92
  Emma Selkin-Aronson, 124
  Pearl Smith, M.D. (Goodwin), 171
  Ella B. Everitt (Potter), 204
  Margaret Caldwell, M.D. (Comstock), 235
  Isabel M. Scharnagel, M.D. (Paolone), 268
  Camille Mermod, M.D. (Geib), 298
  Pearl M. Stetler, M.D. (Williams), 333
  Elisabeth Larsson, M.D. (Storkan), 377
  Mabel E. Gardner, M.D. (Macfarlane and Ratterman), 411
  Helena T. Ratterman, M.D. (Gardner), 412
Allergy, present status of (Felshin), 74
Amenorrhea produced by electroconvulsive therapy (Tietz), 358
AMERICAN MEDICAL WOMEN'S ASSOCIATION:
  A.W.H., another tale of two cities: Nikaia, Greece, and Los Angeles, California (Lovejoy), 166
  Annual meeting, 1954
    High lights of, 264
    minutes of, 300
    nominations, 90, 163
    notice, 49
    program, 120, 164
    Woolley memorial lecture, 120
  Association program, preview of 1954-1955, 164
  Award winner speaks (Cowsert), 328
    winners 1954, 294
  Branches, news from, 27, 228, 336, 376
  Citations of achievement—1955, 328
  Constitution and by-laws, proposed changes, 121
  Contest for scientific essays, 49, 87, 119, 168, 194, 228, 265
  In memoriam, 50, 265
  Junior branch news, 374
  Mid-Year Board meeting, 1954
    action taken at, 88
    High lights, 407
    Medical women of year, 408
    minutes (1953), 127
    notice, 293
    program, 328
  New members, 121, 168, 194, 229, 376
  President's message (Ahlem), 27, 49, 87, 119, 163, 193
    message (Mermod), 227, 263, 293, 329, 375, 407
  Resolution, 299
A.W.H. in Korea, 379
Anemia, nutrition and (Darby), 275
Anesthesia, endotracheal, for tonsillectomy and adenoidectomy in children (Dollinger), 350
Anomalies, congenital (Grad), 387
Anticoagulant therapy, clinical experience with (Glueck), 381
Antihistaminic drug (thonzylamine), effect, on uterine contractility (Dreyer and Slavin), 35
Argentina, medical women in (Shepherd), 20
Aronson, Emma Selkin-, 124
Arthritis, erythema multiforme following phenylbutazone treatment for (Gelber), 361
Arthritis, rheumatoid (Trommer, Gellman, Smith, Hollander, and Maguire), 205
Asia, health problems of southeast (Pollock), 287
Atomic industrial forum (Geib), 115
Atwell, Susanna, Intussusception, 151
Auscultation as adjunct in obstetrics (Girard), 248

B

Bacillus Perfringens, septicotoxemia caused by: report of 75 cases secondary to septic abortion (1948 to 1952) (Mahn), 2
Barringer, Emily Dunning, Greetings to my old friends and new, 312
Bass, Elizabeth, It runs in family, three sisters who were physicians, 44
  These were first, 34, 57, 95, 126, 173, 203, 236, 269, 297, 336
Bernard, Marcelle, Ines L. C. de Allende, M.A., 30
  Ruth A. Parmelee, M.D., 53
Bezoars, rectal (Smith), 399
Ballistocardiography, review of (Morris), 391
Blackwell citations of New York Infirmary 1954, 198
Bogatko, Frances H., New York Infirmary, 258
Bolivia, medical problems (Tichauer), 16
Breast self-examination film (Rogers), 116
Breast nodule (Parsons and Pisarek), 317
Brodie, Jessie Laird, Latin-American colleagues visit United States, 21
  Pan America: contributor to world peace, 1
  Tegualda Ponce, M.D., 29
Brokaw, Katherin, and Waldo, Irma, Retrolental fibroplasia, 181
Brucellosis, diagnosis, treatment (Papajoannou), 79

C

Caldwell, Margaret (Comstock), 235
Cancer, cytologic detection of uterine (Stern and Menoher), 343
  effect of age in clinical course of (Klopp), 109
  report of Kate Depew Strang prevention clinic (Wakeham and Ekstrom), 255
  sex steroids and (Finkler), 7
  techniques employed in experimental chemotherapy (Sykes), 103
Candau, M. G., World health day address, 277
Carcinoma of choroid (Sitchevska), 113
  endometrial (Henle), 11
Cardiovascular anomalies, brief sketches of operable congenital (Purdy), 146
Cerebral palsy program, preschool (Thelander), 157
Cervical pathology, cytology as new diagnostic tool in (Laprade), 175
Cesarean section, spontaneous rupture of uterine scar during (Wright), 398
  section at Women and Children's hospital (Stephens), 324
Chemotherapy, cancer, techniques employed in experimental (Sykes), 103
Children's hospital, enlarged facilities (Reno), 161
Choroid, carcinoma of (Sitchevska), 113
Cincinnati, medical education of women in, 401
Clark, Dorothy V., Some diagnostic suggestions in endocrinology, 359
Clift, Mary M., Duplication of small intestine, 396
Climacteric, physiology and management of (Goldfarb), 77
Comstock, Elizabeth, Margaret Caldwell, M.D., 235
Constitutional reaction to penicillin and streptomycin (Newman), 253
Correspondence (Odlum), 225

Current publications of medical women, 64, 96, 136, 241, 273, 343
Cytology as new diagnostic tool in cervical pathology (Laprade), 175

D

Danes, Claire, Report of panel discussion on rooming-in, 80
Dantuono, Louise M., Common obstetric emergencies, 245
Darby, William J., Nutrition and anemia, 275
de Allende, Ines L. C. (Bernard), 30
Doctors are teachers (Mermod), 290
Dreyer, N. B., Action of some iron salts on gastric acidity, 179
and Slavin, W. J., Effect of antihistaminic drug (thonzylamine) on uterine contractility, 35
Duplication of small intestine (Clift), 396

E-F

Education, medical, of women in Cincinnati, 401
Ekstrom, Dorothy E., and Wakeham, Isabella S., Report of Kate Depew Strang cancer prevention clinic of New York Infirmary: 1949 to 1954, 255
Electroconvulsive therapy, amenorrhea produced by (Tietz), 358
Elephantiasis vulvae during pregnancy (Jennings), 153
Emergencies, common obstetric (Dantuono), 245
Endocrinology, diagnostic suggestions (Clark), 359
Endometrial carcinoma (Henle), 11
Endotracheal anesthesia for tonsillectomy and adenoidectomy in children (Dollinger), 350
Epilepsy, abdominal (Hernandez), 188
Erythema multiforme following phenylbutazone treatment for arthritis (Gelber), 361
Everitt, Ella B. (Potter), 204
Eye programs, industrial (Kuhn), 41
Family, it runs in, three sisters (Bass), 44
Fang, I. C., WHO in western Pacific region, 280
Felshin, Gertrude, Present status of allergy, 74
Fibroplasia, retrolental (Brokaw and Waldo), 181
Film, breast self-examination (Rogers), 116
Finger, simple device to remove ring (Peritz), 257
Finkler, Rita S., Sex steroids and cancer, 7
Foreign body, intrauterine (Pallais), 362
Friedman, Arnold P., and Pool, Naomi de Sola, Observations on treatment of headache, 39

G

Gardner, Mabel E. (Macfarlane and Ratterman), 411
Helena T. Ratterman, M.D., 412
Gastric acidity, action of some iron salts on (Dreyer), 179
Geib, M. Eugenia, Atomic industrial forum, 115
Camille Mermod, M.D., 298
Seventh congress, 51
Gelber, Anita, Erythema multiforme following phenylbutazone treatment for arthritis, 361
Gellman, Milton B., and others, Treatment of rheumatoid arthritis, 205
Girard, Josephine A., Auscultation as adjunct in obstetrics, 248
Glasgow, Maude, Women physicians, 24
Glueck, Helen I., Clinical experience with anticoagulant therapy, 381
Goldfarb, Alvin F., Physiology and management of climacteric, 77
Goodwin, Occo Elaine, Pearl Smith, M.D., 171
Grad, Marjorie A., Congenital anomalies, 387
Graduates, women, from Cincinnati medical colleges, survey (Schneider), 400
Greetings to old friends and new (Barringer), 312

H

Happen, this could, to someone you love (Jeancon), 372
Headache, observations on treatment of (Pool and Friedman), 39
Health problems of southeast Asia (Pollock), 287
Hemosiderin, bone marrow, in infants and children (Wallerstein), 149
Henle, Carye-Belle, Management of endometrial carcinoma, 11
Hepatoma in eleven month old infant (Mehlman and Raymond), 250
Hernandez R., Lucrecia, Abdominal epilepsy, 188
Hess, Emily, Rehabilitation and what it means, 394
Hicks, Elizabeth S., Teaching program at Children's Hospital, 160
Hollander, Joseph L., and others, Treatment of rheumatoid arthritis, 205
Hu, Helen, Abruptio placentae and placenta previa, 143
Huberty, Gertrude T., Relative value of photofluorograms in tuberculosis control program, 353

I-J-K

Industrial eye programs (Kuhn), 41
Infant, hepatoma in (Mehlman and Raymond), 250
In memoriam, Florence Rena Sabin, M.D., 34
Helen MacMurchy, M.D., 94
Insemination, exogamous artificial, what should doctor know about (Stewart), 368
Intestine, small, duplication of (Clift), 396
Intrauterine foreign body (Pallais), 362
Intussusception (Atwell), 151
Iron salts, action of some, on gastric acidity (Dreyer), 179
Jeancon, Etta C., This could happen to someone you love, 372
Jennings, Agnes F., Elephantiasis vulvae during pregnancy, 153
Jones, Julia M., Present trends in treatment of tuberculosis, 69
Kimball, Amy Garrison (Martin), 92
King, Gordon G., and Siris, Evelyn, Value of placental localization in last trimester of pregnancy, 137
Klemperer, Edith, Mismatched mates, 216
Klopp, Calvin T., Some remarks on effect of age in clinical course of cancer, 109
Korea, A.W.H. in, 379
Kuhn, Hedwig S., Industrial eye programs, 41

L-M

Laprade, Claude Marie, Cytology as new diagnostic tool in cervical pathology, 175
Larsson, Elisabeth (Storkan), 377
Latin-American colleagues visit United States (Brodie), 21
Letters to editor, 133
Los Angeles firsts (Lyons), 378
Lovejoy, Esther P., Another tale of two cities: Nikaia, Greece, and Los Angeles, California, 166
Lyons, Dorothy J., Los Angeles firsts, 378
Macfarlane, Catharine, and Ratterman, Helena T., Mabel E. Gardner, M.D., 411
MacMurchy, Helen, obituary, 94
Maguire, Elliott F., and others, Treatment of rheumatoid arthritis, 205
Mahn H., Erna, Septicotoxemia caused by Bacillus Perfringens; report of 75 cases secondary to septic abortion, 2
Martin, Elizabeth, Amy Garrison Kimball, M.D., 92
Mason-Hohl, Elizabeth, We are the aging, 365
Maternal welfare, meeting of American committee on, 292
Mates, mismatched (Klemperer), 216
MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION:
Message from president (Reid), 26, 51

Seventh congress, 84
(Geib), 51
program, 165
Revised tour itinerary, 1954, 193
WHO and MWIA (Reid), 91
Mehlman, Julia, and Raymond, Norman, Hepatoma in eleven month old infant, 250
Menoher, Nancy P., and Stern, Elizabeth, Cytologic detection of uterine cancer in cancer detection clinic, 343
Mental hygiene, conference of European league for, 221
Mermod, Camille, Doctors are teachers, 290
(Geib), 298
President's message, 227, 263, 293, 329, 375, 407
Mismatched mates (Klemperer), 216
Morani, Alma Dea, Trypsin—its use in general practice, 313
Morris, Gwendolyn M. L., Review of ballistocardiography, 391

N-O

Newman, Grace T., Clinical reaction to penicillin and streptomycin, 253
News of women in medicine, 31, 54, 93, 125, 172, 198, 232, 266, 311, 334, 380
New York Infirmary (Bogatko), 258
Nodule, breast (Parsons and Pisarek), 317
Nutrition and anemia (Darby), 275
Obstetric, common, emergencies (Dantuono), 245
Obstetrics, auscultation as adjunct in (Girard), 248
Odlum, Doris M., Correspondence, 225
Opportunities for women in medicine, 28, 50, 89, 122, 169, 195, 231, 262, 299, 330, 376

P

Pacific, WHO in western, region (Fang), 280
Pallais, Virginia, Intrauterine foreign body, 362
Pan America: contributor to world peace (Brodie), 1
American Sanitary Bureau reports progress and plans, 13
Paolone, Clementina J., Isabel M. Scharnagel, M.D., 268
Papajoannou, Anna, brucellosis, diagnosis and treatment, 79
Parmelee, Ruth A. (Bernard), 53
Parsons, Eloise, and Pisarek, Helen, Breast nodule: analysis of three hundred thirty-six consecutive biopsies of breast, 317
Past presidents of AMWA
Mabel E. Gardner, M.D. (Macfarlane and Ratterman), 411
Helena T. Ratterman, M.D. (Gardner), 412
Penicillin and streptomycin, constitutional reaction to, (Newman), 253
Peritz, Edith, Simple device to remove ring from finger, 257
Phenylbutazone treatment for arthritis, erythema multiforme following (Gelber), 361
Photofluorograms in tuberculosis control program, relative value of (Huberty), 353
Pioneering, still, 403
Pisarek, Helen, and Parsons, Eloise, Breast nodule: analysis of three hundred thirty-six consecutive biopsies of breast, 317
Placenta previa, abruptio placentae and (Hu), 143
Placental localization, value of, in last trimester of pregnancy (Siris and King), 137
Pollock, James S. McKenzie, Health problems of southeast Asia, 287
Ponce, Tegualda (Brodie), 29
Pool, Naomi de Sola, and Friedman, Arnold P., Observations on treatment of headache, 39
Potter, Ellen C., Ella B. Everitt, 204
Pregnancy, elephantiasis vulvae during (Jennings), 153
value of placental localization in last trimester of (Siris and King), 137
Problem clinic
Preschool cerebral palsy program (Thelander), 157
What should doctor know about exogamous artificial insemination? (Stewart), 368
Pruritus ani and vulvae (Seletz), 355
Psychologic factors in management of tinea capitis (Storkan), 356
Purdy, Ann, Brief sketches of operable congenital cardiovascular anomalies, 146

R

Ratterman, Helena T. (Gardner), 412
and Macfarlane, Catharine, Mabel E. Gardner, M.D., 411
Raymond, Norman, and Mehlman, Julia, Hepatoma in eleven month old infant, 250
Reaction, constitutional, to penicillin and streptomycin (Newman), 253
Rectal bezoars (Smith), 399
Reid, Ada Chree, Message from president of MWIA, 26, 51
WHO and MWIA, 91
Rehabilitation and what it means (Hess), 394
Reno, Glenn M., Enlarged facilities at Children's hospital, care of women and children, 161
Reports of proceedings:
Atomic industrial forum (Geib), 115
Conference of European league for mental hygiene, 221
Meeting of American committee on maternal welfare, 292
Retrolental fibroplasia (Brokaw and Waldo), 181
Rheumatoid arthritis (Trommer, Gellman, Smith, Hollander, and Maguire), 205
Ring, simple device to remove, from finger (Peritz), 257
Rogers, Helen Margaret, Response to breast self-examination film: women want to know facts about cancer, 116
Rooming-in, report of panel discussion on (Danes), 80
Ross, Mary J., 52
Rupture, spontaneous, of uterine scar during cesarean section (Wright), 398

S

Sabin, Florence Rena, obituary, 34
Scharnagel, Isabel M. (Paolone), 268
Science teaching, basic, and research as career in medicine (Tepperman), 195
Schneider, Margaret Jane, Survey of women graduates from Cincinnati medical colleges: 1879 to 1953, 400
Seletz, Rachelle, Pruritus ani and vulvae: new etologic concept, 355
Septicotoxemia caused by Bacillus Perfringens, report of 75 cases secondary to septic abortion (1948 to 1952) (Mahn), 2
Sex steroids and cancer (Finkler), 7
Shepherd, Gwendolyn, Medical women in Argentina, 20
Siris, Evelyn, and King, Gordon G., Value of placental localization in last trimester of pregnancy, 137
Sitchevska, Olga, Carcinoma of choroid, metastasized from mammary cancer, 113
Slavin, W. J., and Dreyer, N. B., Effect of antihistaminic drug (thonzylamine) on uterine contractility, 35

Smith, Pearl (Goodwin), 171
Richard T., and others, Treatment of rheumatoid arthritis, 205
Speech therapy, total (Wohlmann), 218
Stephens, Natalie, Cesarean section at Women and Children's hospital, 324
Stern, Elizabeth, and Menoher, Nancy P., Cytologic detection of uterine cancer in cancer detection clinic, 343
Stetler, Pearl M. (Williams), 333
Stewart, Wendy, what should doctor know about exogamous artificial insemination? 368
Storkan, Margaret Ann, Elisabeth Larsson, M.D., 377
Psychologic factors in management of tinea capitis, 356
Strang cancer prevention clinic, report of (Wakeham and Ekstrom), 255
Streptomycin and penicillin, constitutional reaction to (Newman), 253
Survey of women graduates from Cincinnati medical colleges (Schneider), 400
Sykes, Marguerite P., Techniques employed in experimental cancer chemotherapy, 103

T

Tale of two cities: Nikaia, Greece, and Los Angeles, California (Lovejoy), 166
Teaching, basic science and research as career in medicine (Tepperman), 195
program at Children's hospital (Hicks), 160
Tepperman, Jay, Opportunities for women in medicine; basic science teaching and research as career in medicine, 195
Thelander, H. E., Preschool cerebral palsy program, 157
Therapy, total speech (Wohlmann), 218
These were first (Bass), 34, 57, 95, 126, 173, 203, 236, 269, 297, 336
Thonzylamine, effect of antihistaminic drug, on uterine contractility (Dreyer and Slavin), 35
Tichauer, Ruth Wrezinski, Medical problems in Bolivia: problems of cultural transition, 16
Tietz, Esther Bogen, Amenorrhea produced by electroconvulsive therapy, 358
Tinea capitis, psychologic factors in management of (Storkan), 356
Tonsillectomy and adenoidectomy in children, endotracheal anesthesia for (Dollinger), 350
Trommer, Philip R., and others, Treatment of rheumatoid arthritis, 205
Trypsin—its use in general practice (Morani), 313
Tuberculosis, present trends in treatment of (Jones), 69
relative value of photofluorograms in control program (Huberty), 353
Tumor board conference: Women and Children's hospital, 320

U-W

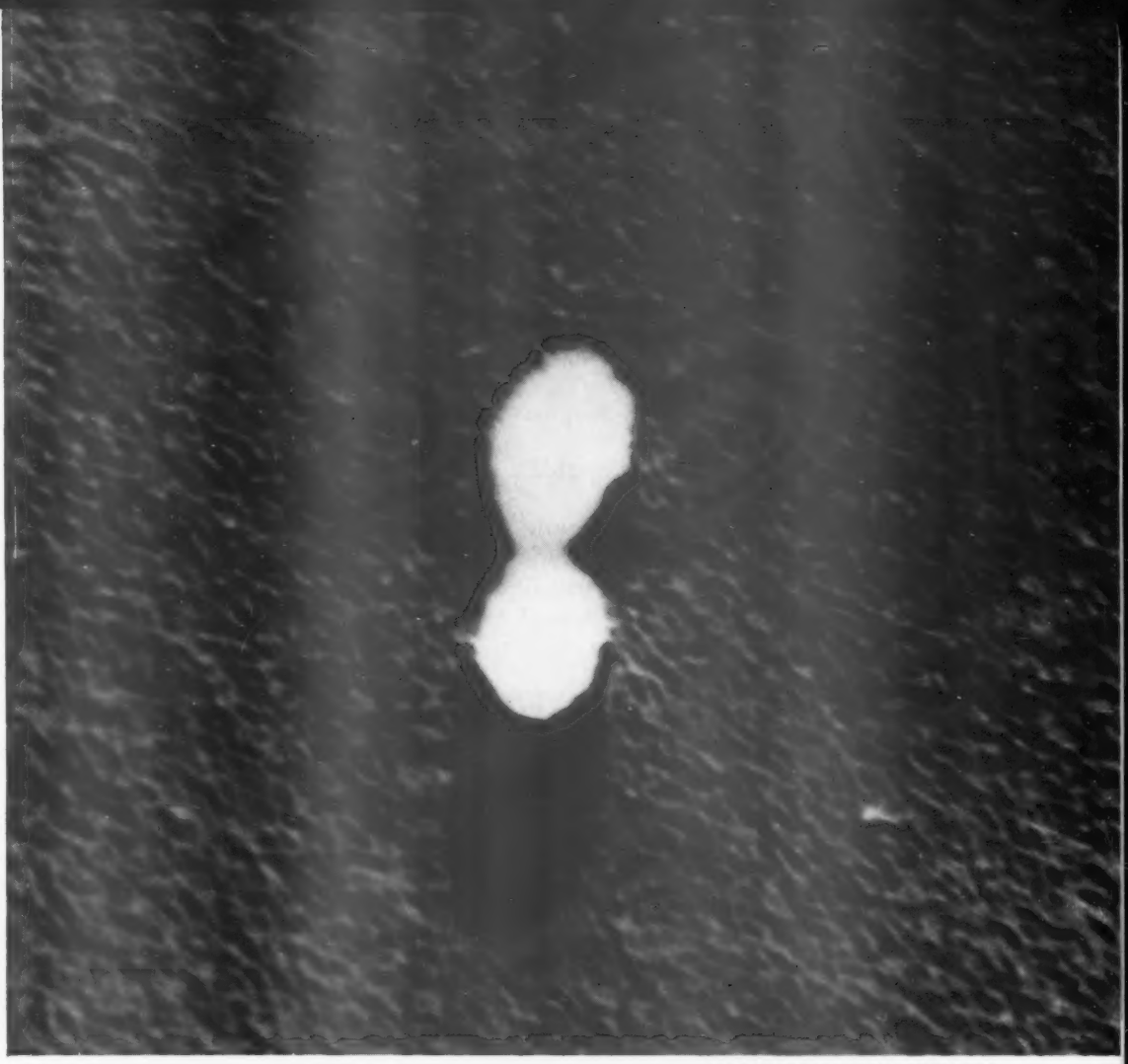
Uterine cancer, cytologic detection of (Stern and Menoher), 343
contractility, effect of antihistaminic drug (thonzylamine) on (Dreyer and Slavin), 35
scar, spontaneous rupture of, during cesarean section (Wright), 398
Wallerstein, Ralph O., Bone marrow hemosiderin in infants and children, 149
Wakeham, Isabella S., and Ekstrom, Dorothy E., Report of Kate Depew Strang cancer prevention clinic of New York Infirmary: 1949 to 1954, 255
Waldo, Irma, and Brokaw, Katherin, Retrolental fibroplasia, 181
Williams, Mary Edith, Pearl M. Stetler, M.D., 333
Wohlmann, Regine F., Total speech therapy, 218
World health day address (Candau), 277
Health Organization, 48, 86, 118, 162, 192, 226, 261, 327, 373
WHO and MWIA (Reid), 91
in western Pacific region (Fang), 280
WHO's fifth year of progress, 287
Wright, Emily E., Spontaneous rupture of uterine scar during cesarean section, 398

BOOK NOTICES:

African mind in health and disease (Carothers), 338
Alcoholism (Smith), 272
Allergic patient and his world (Sammis), 340
Allergy, clinical, manual of (Sheldon, Lovell, and Matthews), 240
American Heart Association, Council for High Blood Pressure Research, Proceedings of annual meeting, 341
American Medical Association Council on Pharmacy and Chemistry, New and nonofficial remedies, 62
Anatomy of pelvis, problems in (Uhlenhuth and Hunter), 60
Anesthesia, history of (Thatcher, Editor), 59
Antibiotics (Pratt and Dufrenoy), 62
Art, psychiatric, experimental studies in (Dax), 61
Ashley, Franklin L., and Love, Horace B., Fluid and electrolyte therapy, 272
Atless, H. B., Chronic iliac pain in women, 134
Atomic defense, physician in (Sears), 58
Back, low, pain, and sciatica (Palumbo), 272
Baker, Roger Denio, and others, Manual of clinical mycology, 271
Bakwin, Harry, and Bakwin, Ruth Morris, Clinical management of behaviour disorders in children, 271
Ruth Morris, and Bakwin, Harry, Clinical management of behaviour disorders in children, 271
Banks, Sam W., and Laufman, Harold, Atlas of surgical exposures of extremities, 135
Behaviour disorders in children, clinical management of (Bakwin and Bakwin), 271
Berglund, H. J., and Nichols, H. L., Jr., It's not all in your mind, 62
Biochemistry of gastric acid secretion (Conway), 58
BOOKS RECEIVED, 63, 135, 238, 341, 382
Borek, Ernest, Man, chemical machine, 59
Botsford, Thomas W., and Dunphy, J. Englebert, Physical examination of surgical patient, 60
Bowers, Warner F., Editor, Surgery of trauma, 134
Bruch, Hilde, Don't be afraid of your child, 59
Buckstein, Jacob, Digestive tract in roentgenology, 237
Care, diabetic, in pictures (Rosenthal and Rosenthal), 239
medical, paying for in United States (Serbein), 238
Carothers, J. C., African mind in health and disease: study in ethnopsychiatry, 338
Chemical machine, man (Borek), 59
Child, Charles G. III, Hepatic circulation and portal hypertension, 339
don't be afraid of your (Bruch), 59
how to have happy (France), 61
normal (Illingworth), 341
Children, behaviour disorders in (Bakwin and Bakwin), 271
Clark, Guy W., Vitamin digest, 58
Clinical allergy, manual of (Sheldon, Lovell, and Matthews), 240

Conant, Norman F., and others, Manual of clinical mycology, 271
Conway, Edward J., Biochemistry of gastric acid secretion, 58
Copying and duplicating medical subjects and radiographs (Gibson, Editor), 62
Dax, E. Cunningham, Experimental studies in psychiatric art, 61
Dead, disposal of (Polson and Marshall), 337
DePalma, Anthony F., Editor, Clinical orthopaedics, number two, 63; number three, 340
Diabetic care in pictures (Rosenthal and Rosenthal), 239
Diagnosis, differential, handbook of (Hyman), 60
Dickson, Frank D., and Diveley, Rex L., Functional disorders of foot, diagnosis and treatment, 272
Diet manual, Mayo clinic (Committee on Dietetics of Mayo Clinic), 271
Digestive tract in roentgenology (Buckstein), 237
Dimond, E. Grey, Electrocardiography, 338
Disability evaluation (McBride), 237
Disoposal of dead (Polson and Marshall), 337
Diveley, Rex L., and Dickson, Frank D., Functional disorders of foot, diagnosis and treatment, 272
Doctor talks to women (Meaker), 338
Doshay, Lewis J., Editor, Parkinsonism and its treatment, 272
Dufrenoy, Jean, and Pratt, Robertson, Antibiotics, 62
Dunphy, J. Englebert, and Botsford, Thomas W., Physical examination of surgical patient, 60
Eastman, Nicholson J., and Zabriskie, Louise, Nurses's handbook of obstetrics, 63
Electrocardiography (Dimond), 338
Electrolyte therapy, fluid and (Ashley and Love), 272
Elliott, H. Chandler, Textbook of nervous system: foundation for clinical neurology, 340
Elwyn, Herman, Diseases of retina, 135
Endocrinology, clinical (Hurxthal and Musulin), 61
in clinical practice (Gordan and Lisser, Editors), 60
Engle, Earl T., Pregnancy wastage, 339
English, O. Spurgeon, Personality manifestations in psychosomatic illness, visual aid charts to psychotherapy, 61
Evaluation, disability (McBride), 237
Examination, physical, of surgical patient (Dunphy and Botsford), 60
Exposures of extremities, surgical, atlas (Banks and Laufman), 135
Female, human, sexual behavior in (Kinsey, Pomeroy, Martin, and Gebhard), 174
Fishbein, Morris, Editor, 1954 medical progress: review of medical advances during 1953, 337
Fleming, Donald, William H. Welch and rise of modern medicine, 270
Fluid and electrolyte therapy (Ashley and Love), 272
Foot, functional disorders of (Dickinson and Diveley), 272
France, Beulah, How to have happy child, 61
Gastric acid secretion, biochemistry of (Conway), 58
Gebhard, Paul H., and others, Sexual behavior in human female, 174
Gibson, H. Lou, Editor, Copying and duplicating medical subjects and radiographs, 62
Gordan, Gilbert S., and Lisser, H., Editors, Endocrinology in clinical practice, 60
Greep, Roy O., Editor, Histology, 339
Grinker, Roy R., Editor, Mid-century psychiatry, 59
and Robbins, Fred P., Psychosomatic case book, 240
Haematology, Sandoz atlas of (Sandoz, Ltd.), 174
Hartman, Frank W., and others, Editors, International symposium, dynamics of virus and rickettsial infections, 239
Haymaker, Webb, and Woodhall, Barnes, Peripheral nerve injuries, principles of diagnosis, 174
Hepatic circulation and portal hypertension (Child), 339
Histochemistry, practical, histopathologic technique and (Lillie), 339
Histology (Greep, Editor), 339
Histopathologic technique and practical histochemistry (Lillie), 339
Histopathology of skin (Lever), 271
Holt, L. Emmett, Jr., Holt pediatrics, 135
Horsfall, Frank L., and others, Editors, International symposium, dynamics of virus and rickettsial infections, 239
Hunter, DeWitt T., and Uhlenhuth, Eduard, Problems in anatomy of pelvis, atlas, 60
Hurxthal, Lewis M., and Musulin, Natalija, Clinical endocrinology, 61
Hyman, Harold Thomas, Handbook of differential diagnosis, 60
Hypertension, portal, hepatic circulation and (Child), 339
Iliac pain, chronic, in women (Atless), 134
Illingworth, Ronald S., Normal child, 341
Infections, streptococcal (McCarty, Editor), 338
virus and rickettsial, dynamics of, international symposium (Hartman, Horsfall, and Kidd, Editors), 239
Influenza: review of current research (World Health Organization), 240
Inhalation therapy, effective (Levine), 270
Kidd, John G., and others, Editors, International symposium, dynamics of virus and rickettsial infections, 239
Kinsey, Alfred C., and others, Sexual behavior in human female, 174
Laufman, Harold, and Banks, Sam W., Atlas of surgical exposures of extremities, 135
Lever, Walter F., Histopathology of skin, 271
Levine, Edwin Rayner, Effective inhalation therapy, 270
Lillie, R. D., Histopathologic technique and practical histochemistry, 339
Lisser, H., and Gordan, Gilbert S., Editors, Endocrinology in clinical practice, 60
Love, Horace B., and Ashley, Franklin L., Fluid and electrolyte therapy, 272
Lovell, Robert, G., and others, Manual of clinical allergy, 240
Luria, S. E., General virology, 240
Malone, Thomas P., and Whitaker, Carl A., Roots of psychotherapy, 62
MacLean, John T., Acute renal failure, including use of artificial kidney, 58
Man, chemical machine (Borek), 59
Marshall, T. K., and Polson, C. J., Disposal of dead, 337
Martin, Clyde E., and others, Sexual behavior in human female, 174
Donald Stover, and others, Manual of clinical mycology, 271
Matthews, Kenneth P., Sheldon, and others, Manual of clinical allergy, 240
Mayo clinic, committee on dietetics, Mayo clinic diet manual, 271
diet manual (Committee on Dietetics of Mayo Clinic), 271
McBride, Earl D., Disability evaluation, 237
McCarty, Maclyn, Editor, Streptococcal infections, 338
Meaker, Samuel Raynor, Doctor talks to women, 338

Medical care, paying for, in United States (Serbein), 238
progress, 1954 (Fishbein, Editor), 337
subjects and radiographs, copying and duplicating (Gibson, Editor), 62
Mental health, proceedings of fourth international congress (Millan, Editor), 62
Millan, Alfonso, Editor, Proceedings of fourth international congress of mental health, 62
Mind, it's not all in your (Berglund and Nichols), 62
Miracle in hills (Sloop), 239
Moscovitz, Howard L., and others, Multiple myeloma, 134
Musical therapy (Podolsky, Editor), 238
Musulin, Natalija,, and Hurxthal, Lewis M., Clinical endocrinology, 61
Mycology, manual of clinical (Conant, Smith, Baker, and Martin), 271
Myeloma, multiple (Snapper, Turner, and Moscovitz), 134
Nerve injuries, peripheral (Haymaker and Woodhall), 174
Nervous system, textbook of (Elliott), 340
Neurology, diagnostic tests in (Wartenberg), 60
Nichols, H. L., Jr., and Berglund, H. J., It's not all in your mind, 62
Normal child (Illingworth), 341
Noyes, Arther P., Modern clinical psychiatry, 134
Nurses' handbook of obstetrics (Zabriskie and Eastman), 63
Obstetrics, nurses' handbook of (Zabriskie and Eastman), 63
Operations, pelvic (Parsons and Ulfelder), 237
Orthopaedics, clinical, number 2 (DePalma, Editor), 63
clinical, number 3 (DePalma, Editor), 340
Orthopedic traction procedures, atlas of (Scuderi), 340
Palumbo, Louis T., Low back pain and sciatica, 272
Parkinsonism and its treatment (Doshay, Editor), 272
Parsons, Langdon, and Ulfelder, Howard, Atlas of pelvic operations, 237
Pediatrics, Holt (Holt), 135
synopsis of (Zahorsky and Zahorsky), 272
Pelvic operations (Parsons and Ulfelder), 237
Pelvis, problems in anatomy of (Uhlenhuth and Hunter), 60
Perimetry (Zuckerman), 270
Personality manifestations in psychosomatic illness (English), 61
Physician in atomic defense (Sears), 58
Podolsky, Edward, Editor, Musical therapy, 238
Polson, C. J., and Marshall, T. K., Disposal of dead, 337
Pomeroy, Wardell B., and others, Sexual behavior in human female, 174
Pratt, Robertson, and Dufrenoy, Jean, Antibiotics, 62
Pregnancy wastage (Engle), 339
Proceedings of annual meeting (Council for High Blood Pressure Research, American Heart Association), 341
Progress, medical, 1954 (Fishbein, Editor), 337
Psychiatric art, experimental studies in (Dax), 61
Psychiatry, mid-century (Grinker, Editor), 59
modern clinical (Noyes), 134
Psychosomatic case book (Grinker and Robbins), 240
illness, personality manifestations in (English), 61
Psychotherapy, roots of (Whitaker and Malone), 62
Public health service, United States (Williams), 59
Remedies, new and nonofficial (American Medical Association Council on Pharmacy and Chemistry), 62
Renal failure, acute (MacLean), 58
Retina, diseases of (Elwyn), 135
Robbins, Fred P., and Grinker, Roy R., Psychosomatic case book, 240
Roentgenology, digestive tract in (Buckstein), 237
Rosenthal, Helen, and Rosenthal, Joseph, Diabetic care in pictures, 239
Sammis, Florence Eastty, Allergic patient and his world, 340
Sandoz, Ltd., Sandoz atlas of haematology, 174
Sciatica, low back pain and (Palumbo), 272
Scuderi, Carlo, Atlas of orthopedic traction procedures, 340
Sears, Thad P., Physician in atomic defense, 58
Serbein, Oscar N., Jr., Paying for medical care in United States, 238
Sexual behavior in human female (Kinsey, Pomeroy, Martin, and Gebhard), 174
Sheldon, John M., and others, Manual of clinical allergy, 240
Skin, histopathology of (Lever), 271
Sloop, Mary T., Miracle in hills, 239
Smith, Davit Tillerson, and others, Manual of clinical mycology, 271
Jackson A., Alcoholism, 272
Snapper, I., and others, Multiple myeloma, 134
Streptococcal infections (McCarty, Editor), 338
Surgery, thoracic (Sweet), 239
of trauma (Bowers, Editor), 134
Surgical exposures of extremities, atlas (Banks and Laufman), 135
patient, physical examination of (Dunphy and Botsford), 60
Sweet, Richard H., Thoracic surgery, 239
Symposium, international, dynamics of virus and rickettsial infections (Hartman, Horsfall, and Kidd, Editors), 239
Tests, diagnostic, in neurology (Wartenberg), 60
Therapy, effective inhalation (Levine), 270
musical (Podolsky, Editor), 238
Thatcher, Virginia S., Editor, History of anesthesia, with emphasis on nurse specialist, 59
Thoracic surgery (Sweet), 239
Tract, digestive, in roentgenology (Buckstein), 237
Traction, orthopedic, procedures, atlas of (Scuderi), 340
Trauma, surgery of (Bowers, Editor), 134
Turner, Louis B., and others, Multiple myeloma, 134
Uhlenhuth, Eduard, and Hunter, DeWitt T., Problems in anatomy of pelvis, atlas, 60
Ulfelder, Howard, and Parsons, Langdon, Atlas of pelvic operations, 237
Virology, general (Luria), 240
Virus and rickettsial infections, dynamics of, international symposium (Hartman, Horsfall, and Kidd, Editors), 239
Vitamin digest (Clark), 58
Wartenberg, Robert, Diagnostic tests in neurology, selection for office use, 60
Welch, William H., and rise of modern medicine (Fleming), 270
Whitaker, Carl A., and Malone, Thomas P., Roots of psychotherapy, 62
Williams, Ralph Chester, United States public health service, 1798-1950, 59
Women, doctor talks to (Meaker), 338
Woodhall, Barnes, and Haymaker, Webb, Peripheral nerve injuries, principles of diagnosis, 174
World Health Organization, Influenza: review of current research, 240
Zabriskie, Louise, and Eastman, Nicholson J., Nurses' handbook of obstetrics, 63
Zahorsky, John, and Zahorsky, T. S., Synopsis of pediatrics, 272
T. S., and Zahorsky, John, Synopsis of pediatrics, 272
Zuckerman, Joshua, Perimetry, 270



ELECTRON PHOTOMICROGRAPH

Streptococcus faecalis 40,000 X

Streptococcus faecalis is a Gram-positive organism commonly involved in

a variety of pathologic conditions, including

urinary tract infections • subacute bacterial endocarditis • peritonitis.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

TETRACYCLINE HYDROCHLORIDE

100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.

EDITORIAL FORECAST

January 1955

The January issue of the JOURNAL is the special number of Branch Twenty-Six, Minnesota, with Dr. Nellie N. Barsness as Guest Editor.

"Anoxia and the Surgical Patient," by Margaret C. Anderson, M.D.

"Primary Amenorrhea," by Della G. Drips, M.D.

"Cerebral Vascular Accidents," by Marguerite Schwyzer, M.D.

"Medical Uses of Radioisotopes," by James L. Born, M.D., is one of the talks presented at the Panel Discussion luncheon on "Peacetime Uses of Atomic Energy" at the Annual Meeting of the American Medical Women's Association, June 20, 1954.

Special articles include "Alaskan Interlude," by Catherine Burns, M.D.

There will be a history of Branch Twenty-Six, and news of women in medicine in Minnesota.

HISTORICAL INFORMATION

For the Establishment of Permanent Historical Records Concerning Members of the American Medical Women's Association

Name ..... Address .....
City ..... State .....
Single ..... Married ..... Widow ..... Children .....
College ..... Graduation year .....
Graduate study ..... Further degrees .....
What have you practiced? ..... Where? .....
Organizations to which you belong .....
Offices held .....
Institutions with which you are, or have been, associated .....
.....
Hospital staff .....
Specialty ..... Further study ..... Dates .....
Research .....
Other types of professional activities .....
Special clinical projects .....
Publications .....
.....
Honors .....
Civic activities .....

PLEASE COMPLETE AND RETURN TO: Ida J. Draeger, *Librarian,* Woman's Medical College of Pa., Henry and Abbottsford, Philadelphia 29, Pa.

Date ..... GULIELMA FELL ALSOP, *Chairman,* Historical Committtee

The MALE is a principal agent of transmission and re-infection in TRICHOMONAL VAGINITIS

Recent studies[1-6] on the incidence of trichomonal infestation in the female apparently corroborate Feo's[7] conclusion that "the male is not only responsible for the re-infection of women, but is the principal agent of transmission." Whittington[6] found that 27 percent of the husbands of women with trichomoniasis had demonstrable organisms in the semen.

According to Lanceley's study[4] of 735 patients as reported in The British Journal of Venereal Diseases and abstracted in *The Journal of the American Medical Association*, trichomonads have been recovered from the preputial sac, urethra, prostate, and the bladder, and the "spread of disease by coitus is not uncommon."

Bernstine and Rakoff[1] recently summarized effective therapy for trichomonal infection and re-infection by recommending the use of condoms ". . . at least three months after both (male and female) have been apparently cured."

Occasionally, patients will manifest a reluctance to use the condom because of inconvenience, inhibition, or an alleged dulling of sensation. These objections are readily overcome following the recommendation and initial trial of convenient, premoistened FOUREX® skins. As these are prepared from the cecum of the lamb, they do not exert any retarding effect on sensory nerve endings. In those cases where cost is a paramount factor, the use of RAMSES,® a transparent, very thin rubber condom, or SHEIK,® a popular-priced brand, will prove eminently satisfactory.

You may prescribe with confidence XXXX FOUREX, or RAMSES, or SHEIK as a rational adjunct to direct therapy of the female. Your prescription by brand name will avoid patient embarrassment at the point of purchase, insure top quality, and assure full acceptance of your regimen.

references:

1. Bernstine, J. B., and Rakoff, A. E.: Vaginal Infections, Infestations, and Discharges, New York, The Blakiston Company, Inc., 1953. 2. Reich, W. J., and Nechtow, M. J.: Practical Gynecology, Philadelphia, J. B. Lippincott Company, 1950, p. 263. 3. Meigs, J. V., and Sturgis, S. H.: Progress in Gynecology, vol. 2, New York, Grune & Stratton, Inc., 1950, k. 433. 4. Lanceley, F.: Brit. J. Ven. Dis. 29:213, Dec. 1953; abstracted, J.A.M.A. 154:1467, April 24, 1954. 5. Crossen, R. J.: Diseases of Women, ed. 10, St. Louis, C. V. Mosby Company, 1953, p. 294. 6. Whittington, M. J.: J. Obst. & Gynaec. Brit. Emp. 58:614, Aug., 1951. 7. Feo, L. G.: Am. J. Trop. Med. 24:195, May, 1944.

JULIUS SCHMID, INC., *Prophylactics Division*
423 West 55th Street, New York 19, N.Y.

For every patient
with clearcut menopausal
symptoms such as **hot flushes,**
there's another patient with symptoms less clearly defined
yet just as distressing . . . headaches,
insomnia, mental and physical fatigue.
Her symptoms may also be indicative of declining ovarian function, and occur
several years before, and even long after, menstruation ceases.
This patient, too, may be expected to **benefit** from "Premarin" therapy.

"PREMARIN"® is a complete equine estrogen-complex.
It not only produces prompt symptomatic relief, but also imparts
a distinctive **"sense of well-being"**
highly gratifying to the patient. It is tasteless and odorless.
"Premarin," estrogenic substances (water-soluble),
also known as conjugated estrogens
(equine), is supplied in tablet
and liquid form.

5101

Ayerst

New York, N. Y. · Montreal, Canada

Each tablet contains:
Pamabrom . . . . . 50 mg.
Acetophenetidin . . . . . 100 mg.
Dose: One tablet q.i.d. starting 5 days before expected onset of menses.

Women's Tension Symptoms Are Different!

THE CALENDAR HOLDS THE KEY...

In tension-anxiety states consider premenstrual tension . . . when headaches, nausea, irritability, insomnia and edema appear regularly before menstruation. These symptoms are due to excess fluid balance. M-Minus 5 prevents premenstrual tension by reducing excess fluid accumulation . . . effectively controlled in 82% of cases.[1]

By preventing uterine engorgement, M-Minus 5 reduces the stimulus to uterine spasm and controls dysmenorrhea. M-Minus 5 is not a hormone, narcotic or sedative and does not interfere with the normal menstrual cycle.

1. Vainder, M.: Indus. M. & S., 22:183, 1953

M-Minus® 5

Premenstrual Diuretic and Analgesic for Premenstrual Tension and Dysmenorrhea

WHITTIER LABORATORIES, 919 N. Michigan Ave., Chicago 11, Ill.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.

APPLICATION FOR MEMBERSHIP

Name ..... Date ....
(Please print as it should appear in the Directory.)
Address (Present) .....
Address (Permanent) .....
(Please check address to which JOURNAL and AMWA correspondence are to be mailed.)
Medical School ..... Year of Graduation .....
Licensed in County ..... State .....
Specialty ..... Certification by American Board of ..... Year ....
Date and Place of Birth .....
Medical Society Affiliations .....
.....
.....
Hospital and Faculty Appointments .....
.....
Public Health, Government, or Industrial Appointments .....
.....
.....

Check membership desired:

☐ Life-Dues $200 (May be paid in two installments in two consecutive years).
☐ Active-Dues $10 per annum. (Branch dues not included in Active membership dues and are payable to Branch treasurer.)
☐ Associate-No dues.
☐ Junior-No dues.

HOUSE FOR SALE

Jamaica, New York, house for sale; six large rooms, Hollywood bath, dishwasher, carpeted wall to wall; including doctor's office, four rooms, modern equipment. Price $30,000, cash $10,000. Broker TWining 7-4621. Write Aldo Morpurgo, 99-52 66th Road, Forest Hills, New York.

TEACHING FILMS ON BURNS

"The Open Method of Burn Therapy" is the latest of two teaching films on the subject of burns that are available on loan to professional groups from Paul F. MacLeod, M.D., medical director, Eaton Laboratories, Norwich, N.Y. It was prepared by John C. Weeter, M.D., instructor in plastic surgery, University of Louisville School of Medicine, and illustrates the technique of open treatment, including the progress of one patient who suffered burns over 62 per cent of his body.

The other film is "Skin Grafting of Extensive Burns," prepared by Harry R. Grau, M.D., Cleveland, O., under the supervision of David W. Robinson, M.D., University of Kansas Medical Center. Both are 16 mm. films in sound and color. The running time of each is 20 minutes.

ANTIQUARIAN "DIURETICK HERBALL"

"Diuretick Herball," containing descriptions and illustrations of plants used in olden times to induce diuresis, has become a feature in the two year old *Diuretic Review*. Pictures and texts are taken and adapted, respectively, from early pharmaceutical "herballs" or published collections.

The new department, appearing first in the September-October issue, is expected to run for several years, and offers a handy comprehensive series or "herball" of its own for the profession. *Diuretic Review*, a bi-monthly publication, is distributed to professional people by Lakeside Laboratories.

Garden asparagus (convallariaceae in the lily of the valley family) is the first plant in "Diuretick Herball." Introduced from Europe as a garden plant, the tasty spear-like vegetable grows as an "escape" in sandy soil and roadside ditches. According to an herball published in 1562, the asparagus root was believed to be mildly diuretic.

Although not necessarily native, all the plants in the new series are grown in America. Many of them are still hlighly regarded in various parts of the world.

CONSTITUTION OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.

Article III, Section 1a. **Active Members** "shall be members of a Branch, if any local Branch exists; if not, they may be Members-at-large."

Article III, Section 6. **Associate Members** "shall be: (1) Medical women in the first year of practice; (2) women interns, residents-in-training, and fellows. Associate members shall not pay dues and shall have all privileges of membership, except voting, holding office, and membership in the Medical Women's International Association."

Article III, Section 7. **Junior Members** "shall be members of Junior Branches in the four undergraduate years of medical school."

All members receive the official publication, the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. Life and Active members receive membership in the Medical Women's International Association.

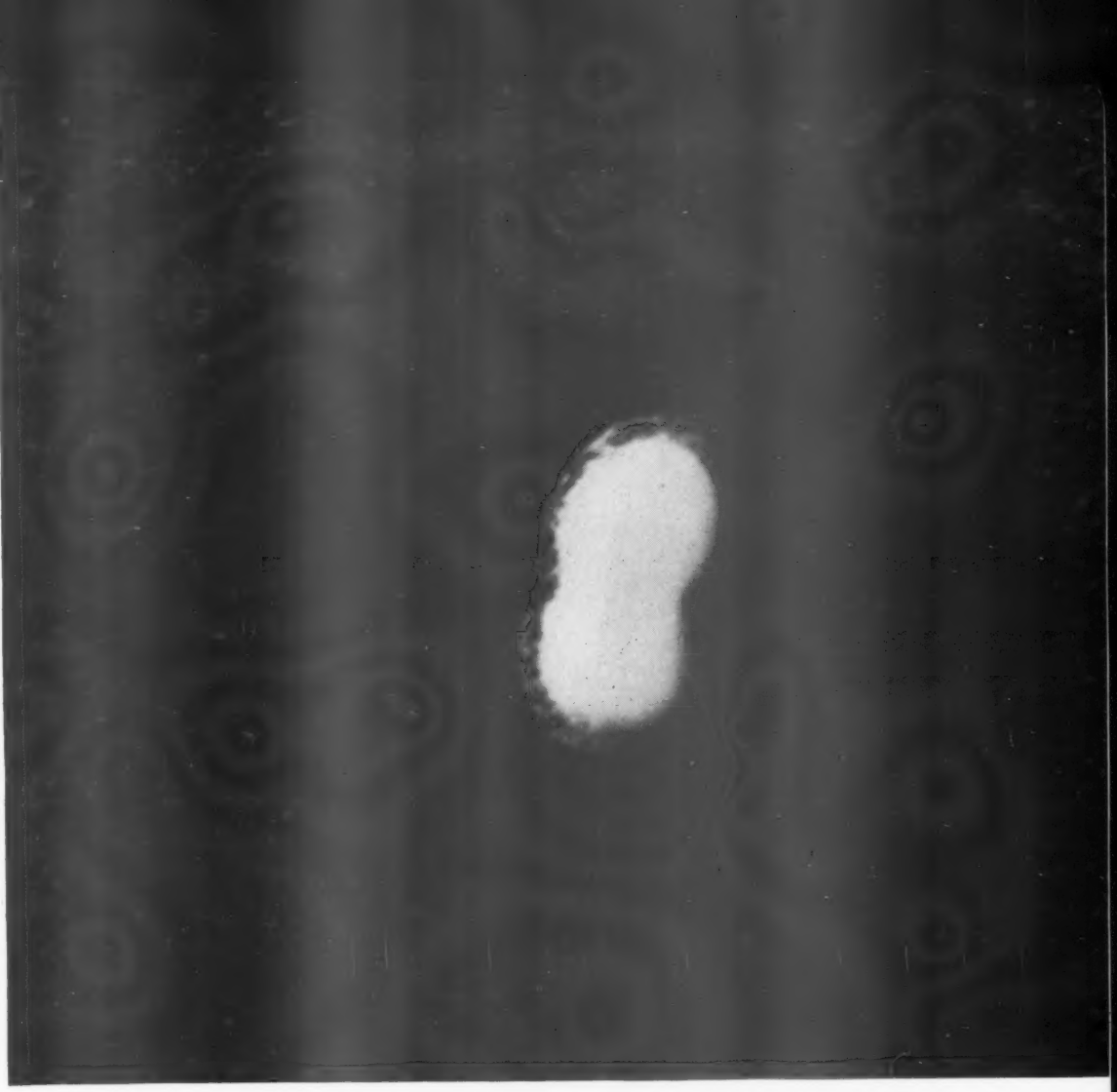
Signature .....

Endorsers are required only if applicant is NOT a member of a State or County medical society. Endorsers must be members of American Medical Women's Association.

Endorser: 1. ..... Address .....

2. ..... Address .....

Checks payable to the American Medical Women's Association, Inc. must accompany application. Mail to Treasurer, A.M.W.A., 1790 Broadway, Room 409, New York 19, New York, or to Branch Treasurer.



ELECTRON PHOTOMICROGRAPH

Diplococcus pneumoniae 35,000 X

Diplococcus pneumoniae (Streptococcus pneumoniae) is a Gram-positive organism commonly involved in

lobar—and bronchopneumonia • chronic bronchitis • mastoiditis • sinusitis • otitis media • and meningitis.

It is another of the more than 30 organisms susceptible to

PANMYCIN*

100 mg. and 250 mg. capsules

*TRADEMARK, REG. U. S. PAT. OFF.

Upjohn

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

GENERAL INFORMATION

THE JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is the official organ of the American Medical Women's Association and is issued monthly the fifteenth of each month.

CONTRIBUTIONS—THE JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION extends an invitation to the profession for articles on original investigation, for reviews, case reports, articles of historical interest—especially those dealing with the status of women physicians, biographies of women in medicine, and any other material on subjects of special concern to women physicians. All manuscripts for publication, letters, and all communications relating to the editorial management of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION should be sent to the Editor at the address below.

Articles are accepted for publication with the understanding that they are original contribution never previously published and are contributed solely to the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. All manuscripts are subject to editorial modification and upon acceptance become the property of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. Material published in the JOURNAL is copyrighted and may not be reproduced without permission of the Editor. Neither the editors nor the publisher nor the American Medical Women's Association will accept responsibility for the statements made or opinions expressed by any contributor in any article published in its columns.

MANUSCRIPTS—Manuscripts must be typewritten on one side of the paper only with double spacing and wide margins. The original and one carbon copy should be submitted; a second carbon copy should be retained by the author. The author's full name, academic or professional titles, and complete address must accompany manuscript.

ABSTRACTS—Authors are requested to submit concise abstracts of their papers to the Editor.

ILLUSTRATIONS—Illustrations must be in the form of glossy prints or drawings in black ink. On the back of each illustration the figure number, author's name, and indication of the top of the picture must be given. Legends for illustrations must be typewritten in a single list. with numbers corresponding to those on photographs and drawings. THE JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION encourages the use of illustrations and will supply a reasonable number free of cost; special arrangements must be made with the Editor for excess illustrations or elaborate tables. The Editor is not responsible for the safe return of manuscripts and illustrations. All material supplied for illustrations, if not original, should be accompanied by reference to the source and permission for reproduction from the owner of copyright. Recognizable photographs of patients should carry with them written permission for publication.

REFERENCES—Bibliographic references should appear at the end of the manuscript and not in footnotes. They should conform to style of the Quarterly Cumulative Index Medicus. This requires, in the order given, name of author, title of article, name of periodical, with volume, inclusive pages, month (and day of month if the journal appears weekly), and year. References should be numbered consecutively throughout the paper and listed in order by number from the text.

Galley proofs of scientific articles will be furnished JOURNAL authors for correction. Proofs of other articles will be supplied upon request.

REPRINTS—Reprints of all articles must be ordered at time proof is returned. Prices will be available for quotation from the Business Manager when articles are in page form. Individual reprints of articles must be obtained from the author.

REVIEWS OF BOOKS—Because of limitations of space, only books of scientific interest or reference value which can be recommended to its readers will be noted. All books for review should be sent to the Editor at address below.

SUBSCRIPTIONS—The subscription price of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is $5.00 per year, $9.00 for two years; single copies are $1.00.

ADVERTISING—Rates will be furnished by the Business Manager of the JOURNAL, 1790 Broadway, New York 19, N. Y. The publishers reserve the right to decline any advertising submitted and to censor all copy. Acceptance of an advertisement does not imply official endorsement of the product advertised.

CHANGE OF ADDRESS—Notification of change of address should be sent to the JOURNAL office, 1790 Broadway, New York 19, N. Y. Please give both old and new addresses.

Address all correspondence to the

JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION

1790 Broadway, New York 19, N. Y.

Ends

Functional

Uterine Bleeding

BLUTENE®

(Tolonium Chloride, Abbott)

With two tablets a day—
complete control of bleeding
of many of your
menorrhagic patients.

This is BLUTENE, an oral therapy, nonhormonal—the first of its kind.

Using what resembles an antiheparin effect, BLUTENE will end symptoms often within two to five days. *And with few recurrences.* Side effects are absent or minor. No withdrawal bleeding, no contraindications—although, of course, organic disease should be ruled out before starting any oral antimenorrhagic therapy.

INDEX TO ADVERTISERS

	Page
Abbott Laboratories	9, 10, 11, 41
Ayerst Laboratories	36
Beech-Nut Packing Company	—
Bristol-Myers Company	17
The Coca-Cola Company	31
Esta Medical Laboratories	—
Hoffmann-La Roche, Inc.	(16-17), 44
Holland-Rantos Co., Inc.	22
Knox Gelatine	—
Lakeside Laboratories, Inc.	—
Lederle Laboratories	26-27
Eli Lilly & Company	32
The S. E. Massengill Company	13
Mead Johnson Co.	Back Cover
Ortho Pharmaceuticals	—
Parke, Davis & Company	19
Pfizer Laboratories Div. of Chas Pfizer & Co., Inc.	—
J. H. Roerig & Co.	1
Schering Corporation	25
Julius Schmid, Inc.	35
Sharp & Dohme	Ins. Back Cover
Martin H. Smith Company	22
Smith, Kline and French Laboratories	23
Tampax Incorporated	8
The Upjohn Company	7, 15, 20, 21, 29, 33, 39, 43
Whittier Laboratories	37
Winthrop-Stearns, Inc.	4

INDEX TO PRODUCTS ADVERTISED

Analgesics
(Premenstrual Tension & Dysmenorrhea)
M-Minus 5 *(Whittier)* 37

Anorexigenic Agents
Am Plus *(Roerig)* 1
Obedrin *(Massengill)* 13

Antibiotics
Achromycin *(Lederle)* 26-27
Biosulfa *(Upjohn)* 20
Erythrosulfa *(Upjohn)* 21
Ilotycin *(Lilly)* 32
Panmycin *(Upjohn)* 7, 15, 29, 33, 39, 43

Anticonvulsants
Dilantin Sodium *(Parke, Davis)* 19

Antihemorrhagic Therapy *(Uterine)*
Blutene *(Abbott)* 41

Antihypertensives
Theominal R. S. *(Winthrop-Stearns)* 4

Antitussives
Sedulon *(Hoffmann-La Roche)* 44

Conception Control
Koromex *(Holland-Rantos)* 22
Ramses Products *(Julius Schmid)* 35

Dietary Supplements
Natalins *(Mead Johnson)* ..... Back Cover

Diuretics *(Premenstrual)*
M-Minus 5 *(Whittier)* 37

Estrogen Therapy
Premarin *(Ayerst)* 36

Hematinics
Feosol: Tablets, Elixir, Feojectin,—Plus, —Hematonic *(Smith, Kline & French)* ..23
Iberol *(Abbott)* 9-11

Hormone Therapy
Oreton testosterone propionate *(Schering)* ..25
Progynon estradiol *(Schering)* 25
Proluton progesterone *(Schering)* 25

Laxatives
Sal Hepatica *(Bristol-Myers)* 17

Prophylactics
Fourex, Ramses, Sheik *(Julius Schmid)* 35

Sedatives
Sedulon *(Hoffmann-La Roche)* 44

Soft Drinks
Coca-Cola *(Coca-Cola)* 31

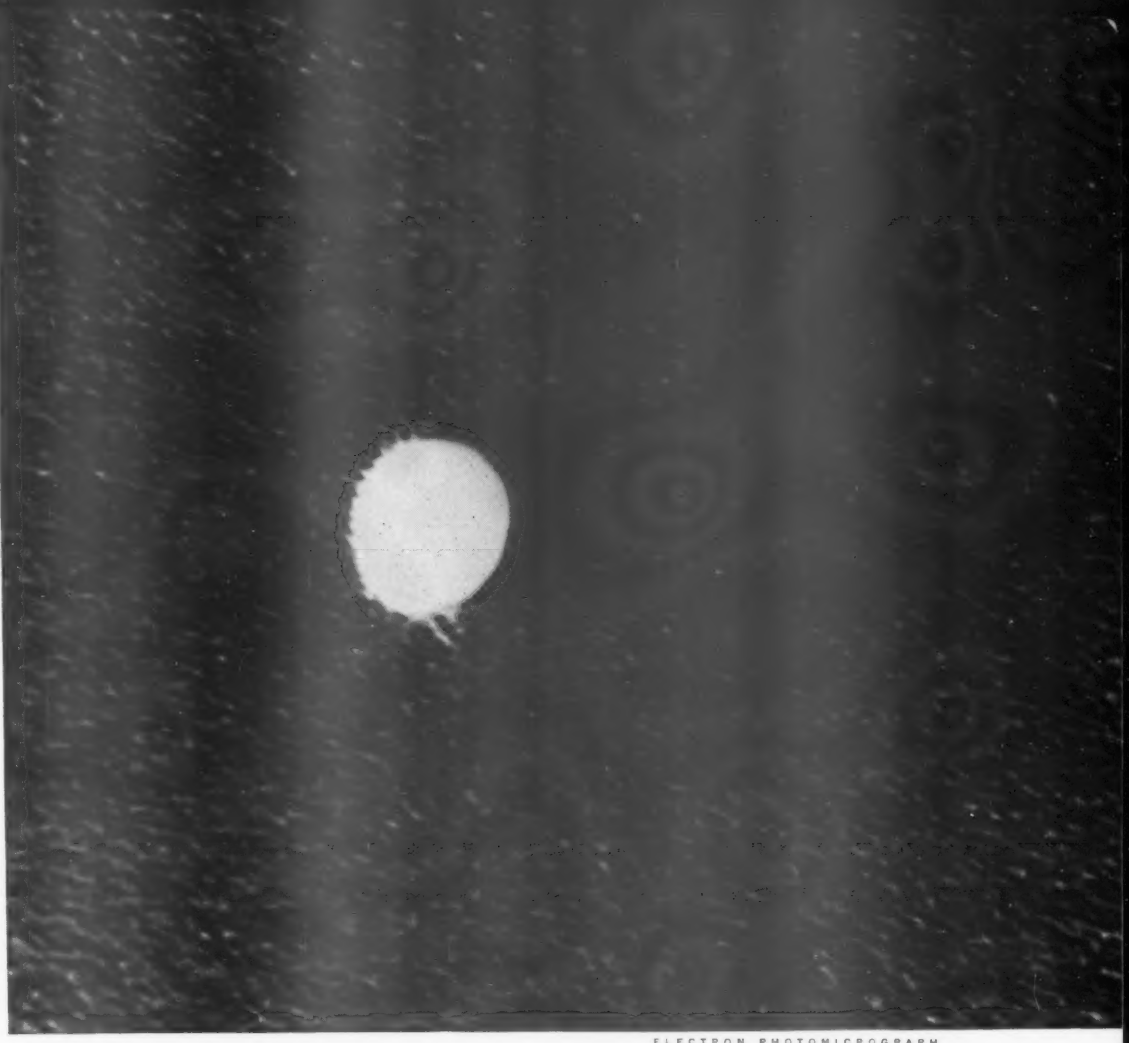
Sulfa Drugs
Biosulfa *(Upjohn)* 20
Erythrosulfa *(Upjohn)* 21
Gantrisin Pediatric Suspension *(Hoffmann-La Roche)* ..... opp. 17

Tampons
Tampax *(Tampax)* 8

Uterine Tonic
Ergoapiol *(Martin H. Smith)* 22

Vaginal Creams, Jellies & Ointments
Koromex *(Holland-Rantos)* 22
Ramses *(Julius Schmid)* 35

Vitamins
Feosol Hematonic (B_{12}) *(Smith, Kline & French* 23
Iberol *(Abbott)* 11
Redisol (B_{12}) *(Sharp & Dohme)* ..... Ins. Back Cover
Vi-Penta Drops *(Hoffmann-La Roche)* opp. 16



ELECTRON PHOTOMICROGRAPH

Staphylococcus aureus 35,000 X

Staphylococcus aureus (Micrococcus pyogenes var. aureus) is a Gram-positive organism commonly involved in a great variety of pathologic conditions, including

pyoderma • abscesses • empyema • otitis • sinusitis • septicemia

bronchopneumonia • bronchiectasis • tracheobronchitis • and food poisoning.

It is another of the more than 30 organisms susceptible to

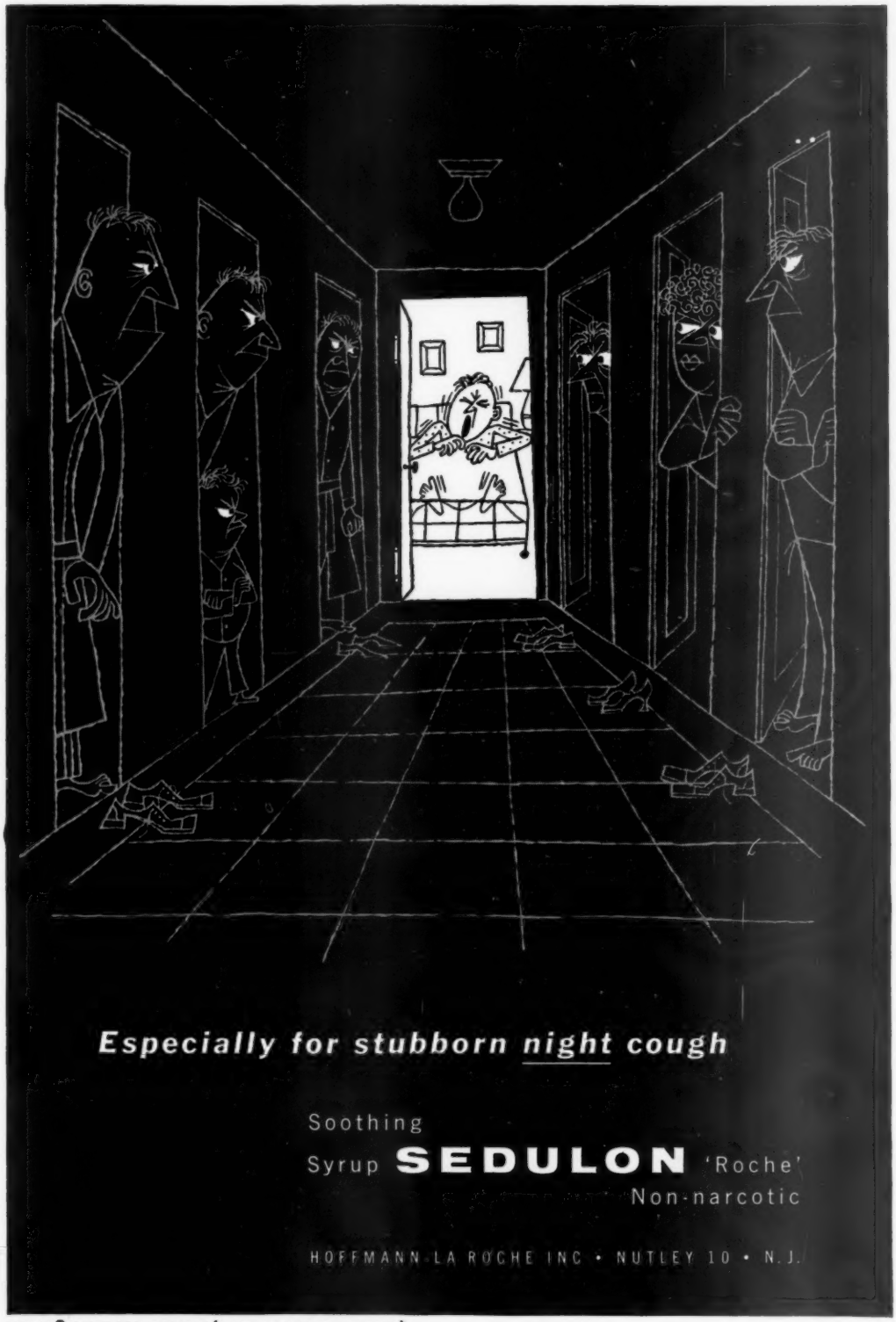
PANMYCIN*

TETRACYCLINE HYDROCHLORIDE

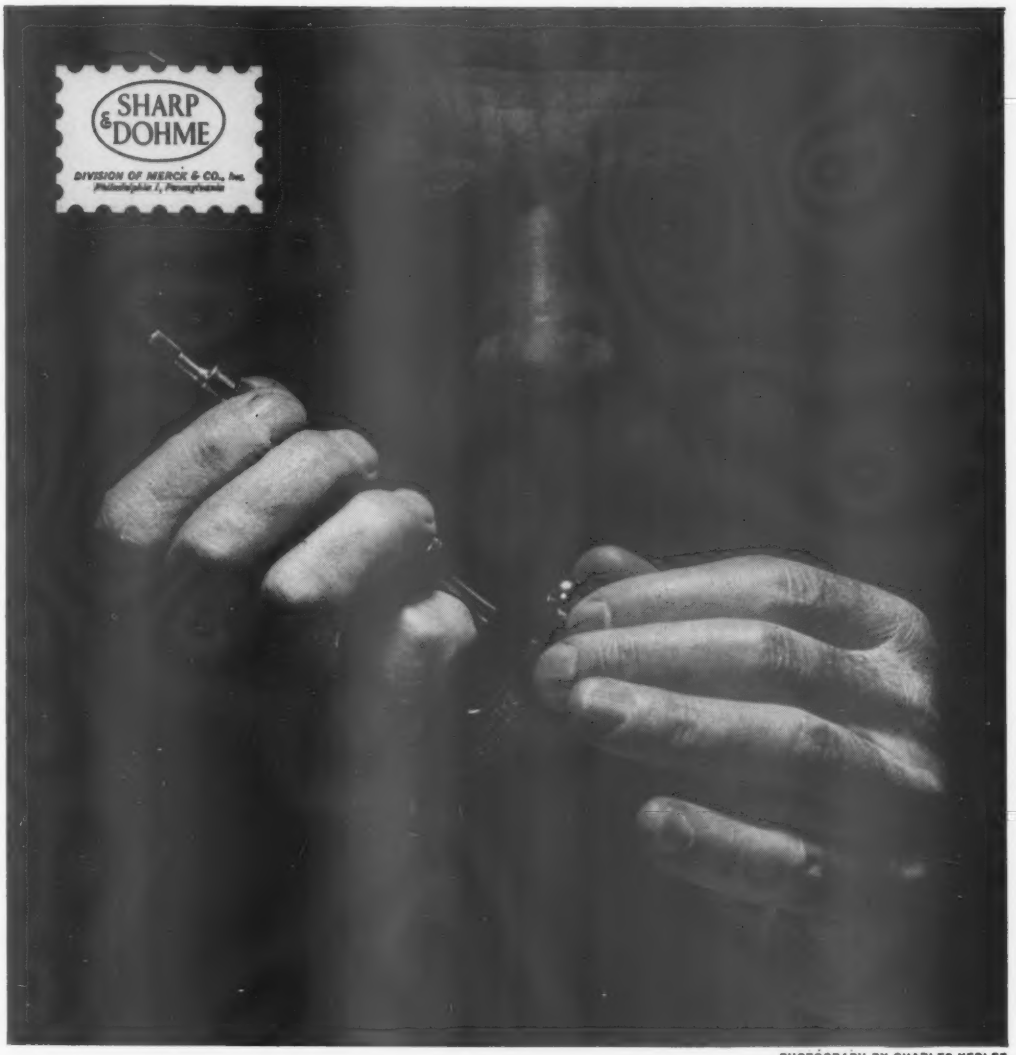
100 mg. and 250 mg. capsules

Upjohn

*TRADEMARK, REG. U. S. PAT. OFF.



SEDULON®--BRAND OF DIHYPRYLONE (3,3-DIETHYL-2,4-DIOXO-PIPERIDINE)



PHOTOGRAPH BY CHARLES KERLEE

Pernicious anemia patient "happy to work again"*

REDISOL®

CRYSTALLINE VITAMIN B_{12}

His job required precision. Vitamin B_{12} remitted the disabling symptoms of pernicious anemia...put him back at work.*

In many cases of anemia, REDISOL—pure vitamin B_{12}, produces similar remarkable results. Hemopoiesis is stimulated, associated neuritic conditions improve.

Small doses of vitamin B_{12} produce the same response in pernicious anemia as injections of potent liver extracts.

Clinical evidence also shows the value of vitamin B_{12} in tropical and non-tropical sprue. In trigeminal neuralgia, pain is remarkably relieved.

Quick Information: REDISOL supplies vitamin B_{12} in a complete range of dosage forms for every practical use. REDISOL *Tablets*, 25 and 50 mcg. in bottles of 36 and 100. REDISOL *Injectable*, 30 and 100 mcg. per cc. in 10 cc. vials—also 1,000 mcg. per cc. in 1 cc. vials. *Elixir*, 5 mcg. per 5 cc. in pint SPASAVER® and gallon bottles.

*From a case report: J.A.M.A. 153:191, 1953.

PROTECTION

from the "difficult" first trimester

to the time of delivery

PREGNANCY—A PERIOD OF CONTINUING STRESS

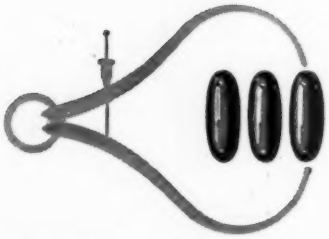
"The adult human female is rarely subjected to greater stress than during pregnancy."[1] Accumulating data show that "notoriously, women enter pregnancy in complete or subclinical nutritive failure."[2]

SUPPLEMENTATION SHOULD BEGIN EARLY

Tompkins[1] emphasizes that "one of the greatest errors in the management of pregnancy" is the "failure to stabilize the patient (nutritionally) and add needed supplementation early in pregnancy." He strongly recommends that all patients be supplemented with vitamins and minerals to insure protection.[1]

Natalins

the new smaller prenatal capsules



smaller size . . .

easier to swallow . . . do not cause or contribute to nausea or regurgitation

smaller dosage . . .

only 3 capsules daily

NATALINS PROVIDE EFFECTIVE NUTRITIONAL SUPPORT

Balanced amounts of 13 vitamins and minerals are provided by Natalins in small, attractive, easy-to-swallow capsules. With Natalins®, your patients get exceptional vitamin-mineral support during the stress of pregnancy. Natalins contain more effective veal bone ash (tricalcium phosphate, not dicalcium phosphate) which provides calcium and phosphorus in a ratio of 2:1—exactly as in human bone.

1. Tompkins, W. T., in Lull & Kimbrough: Clinical Obstetrics, Philadelphia, Lippincott, 1953, pp. 165-209. 2. Guerriero, W. F.: Texas State J. Med. 45: 274, 1949.

The Natalins formula:	3 capsules daily supply:
Vitamin A	6000 units
Vitamin D	600 units
Ascorbic acid	100 mg.
Thiamine	3 mg.
Riboflavin	4.5 mg.
Niacinamide	30 mg.
Pyridoxine hydrochloride	0.6 mg.
Calcium pantothenate	3 mg.
Folic acid	1 mg.
Vitamin B_{12} (crystalline)	1 mcg.
Iron (from ferrous sulfate)	22 mg.
Purified veal bone ash to supply:	
Calcium	375 mg.
Phosphorus	188 mg.

Natalins also contain traces of copper, zinc, manganese, magnesium and fluorine.

All vitamins are in synthetic (hypoallergenic) form.

Bottles of 100 and 500 capsules.

MEAD

MEAD JOHNSON & COMPANY
EVANSVILLE, INDIANA, U. S. A.